

Crenilabrus quadrimaculatus, Garrett.

B. 6; D. 12-9; A. 3-13; V. 1-5; P. 15; C. 3, 1, 6, 6, 1, 3.

The greatest depth of the body equals the length of the head, which latter constitutes one-fourth of the fish. Both dorsal and ventral outlines are similarly arched. The upper profile of the head is nearly straight. The eyes are oval in shape, their greatest diameter entering about four and a half times in the length of the head, and exactly midway between the tip of the snout and the origin of the lateral line. The hinder termination of the maxillary does not quite reach the anterior line of the eye.

The dorsal fin commences at a point immediately above the base of the pectorals, and its spiny portion is twice the length of the soft, and the rays gradually increase in height posteriorly, though preserving a gently arched outline. The anal fin passes over a base a trifle more than half that of the dorsal, and extends a little more posterior to the fin above. It tapers rather rapidly posteriorly. The ventrals are slightly pointed, and the caudal is large and truncate behind.

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Color: the head, and the anterior half of the body, obliquely upward as far as the origin of the soft portion of the dorsal is reddish brown, and the posterior half carnation, passing into rich orange yellow on the caudal trunk and fin. The lower line of the head, breast and belly, lead color. Irides varied with light pink and vermillion. The pectorals are light carnation, and the ventrals pale with their rays articulated with light and dark olivaceous. The spiny portion of the dorsal is reddish brown, its soft part nearly colorless with orange-yellow rays. Anal pale olivaceous. A large sub-circular spot on the base of the pectorals, and a similar one on the anterior half of the soft dorsal and anal, deep black. The anterior fourth of the spiny portion of the dorsal is also deep black.

Length, $5\frac{1}{2}$ inches.

Habitat.—Society Isls. Penmotu Isls.

Remarks.—A very rare species, of which I was fortunate to procure a single example. The four conspicuous black spots will at once determine the species. At the latter location I saw several swimming about the coral reefs.



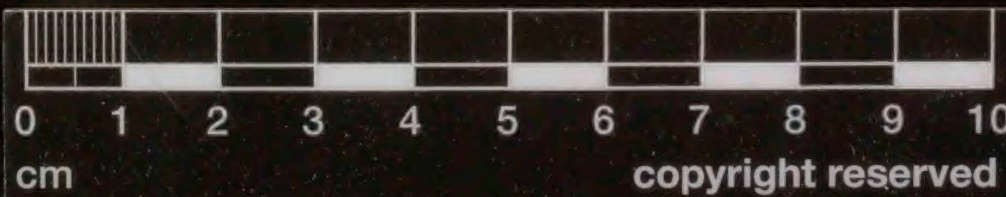
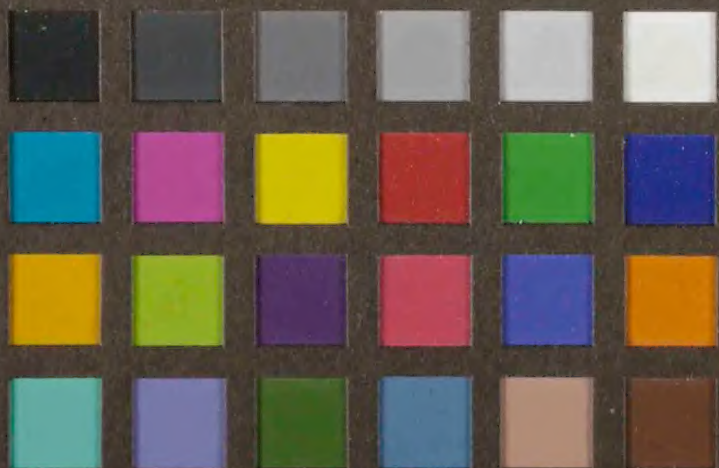
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Original

Cossyphus axillaris



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Crenilabrus multicolor, Garrett.

D. 12-11; A. 3-13; P. 1-5; P. 16; C. 5; 1, 6, 6, 1, 4.

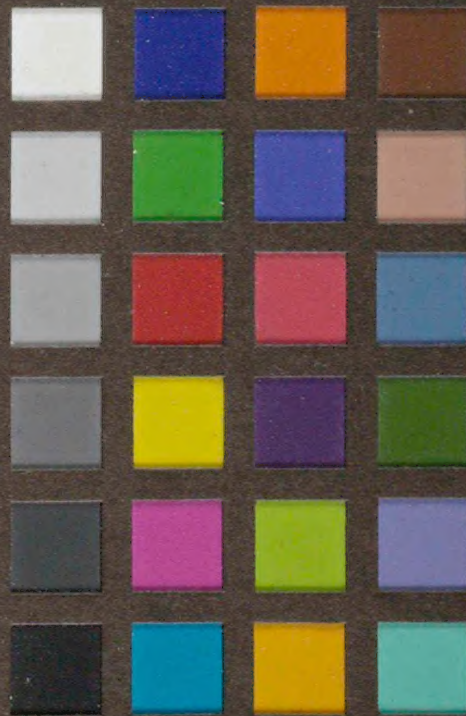
The upper and lower outlines are similar, both forming gentle curves, and the length of the head equals the greatest depth of the body. The somewhat large eyes are one-fourth as long as the head in their diameter.

The dorsal fin commences immediately above the hinder edge of the opercle, and the spiny portion comprises a trifle more than two-thirds of the fin, which is posteriorly rounded off. The anal starts from a point opposite the tenth dorsal spine and is a little deeper anteriorly than the fin above. The ventrals, when closely appressed to the abdomen covers the vent with their tips. The pectorals are as long as the ventrals, and the caudal is large and posteriorly truncate.

The head and anterior half of the body is of a fine carnation tint, becoming paler beneath and passing into yellow above. The posterior part of the body, as far as the termination of the dorsal and anal fin, is black;

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which color spreads over the basal parts of the contiguous fins and fades away anteriorly. Both head and body lined with purple brown, which become vermilion red beneath where they are more or less interrupted. The follow and correspond to the horizontal rows of scales. The middle horizontal third of the head is traversed by three bands of the same color as the upper lineations, the upper one interrupted by the eye. Irides silvery, with an inner red ring. Ventrals pinkish, the latter with the rays edged with orange and red. The dorsal fin is yellow, with a black anterior spot. Anal black with the central portion yellow. The other fins colorless.

Length, $4\frac{1}{2}$ inches.

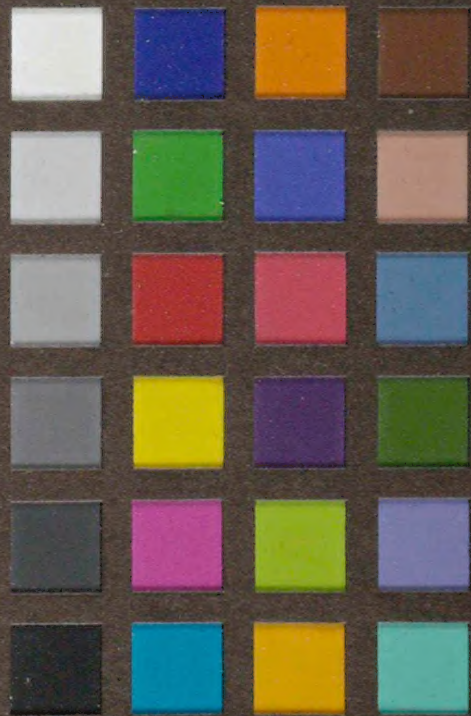
Habitat: Sandwich Isls.

This must be an extremely rare fish, as I discovered only a solitary example during several years residence at the above group. It is closely allied to *C. Chabrolui*, Lesson, from Mauritius, and the markings somewhat resemble *C. amala*.

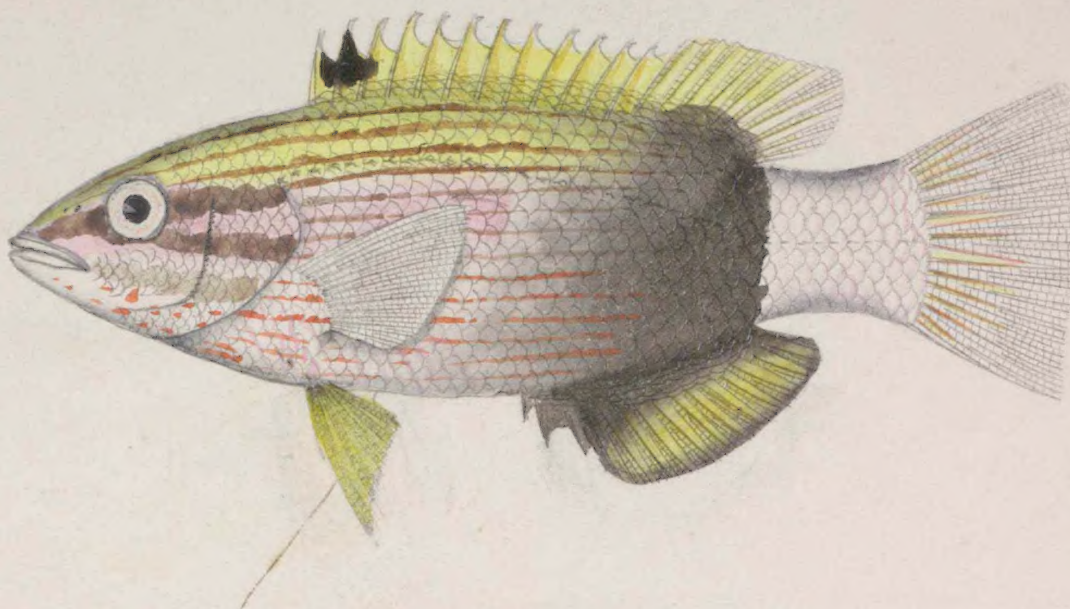
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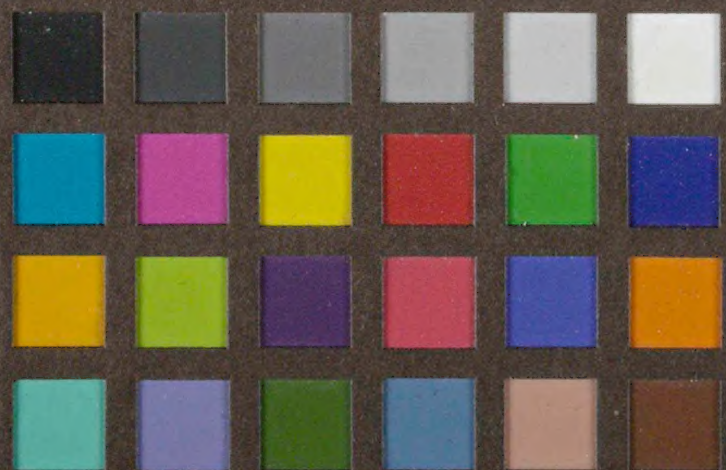


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Plaf. 120
Thalassoma lineolatus juv.

388



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Coryphæus bilunulatus at.

287

180

Crenilabrus awala, garrett.

B. 6; D. 12-10; A. 3-12; V. 1-5; P. 16; C. 2, 1, 6, 6, 1, 2.

The depth of the body at the origin of the dorsal fin equals the length of the head, which latter constitutes a fourth of the total length of the fish. A slight concave depression may be observed immediately above the eyes. The hinder tip of the maxillary reaches a vertical passing through the center of the eye. The preopercular serrations are minute. The eyes are rather large, oval in shape, their greatest diameter entering five times in the length of the head, and placed a little nearer to the origin of the lateral line than the end of the snout.

The dorsal fin passes over a base nearly half the length of the fish, caudal excluded. Its altitude is nearly the same throughout, and its spiny portion comprises about two-thirds of the fin. Its soft part is posteriorly truncated. The anal fin is less than half the length of the dorsal or nearly one-fifth the entire length of the fish. Its lower margin is convex.

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The ventrals have their anterior portion slightly prolonged into a point, which, when closely appressed to the abdomen reaches the vent. Caudal slightly concave.

Color pinky-white, gradually passing into yellow posteriorly, and longitudinally lineated with pinky-brown. Head carnation along the middle, the lower parts irregularly spotted with brown, and the upper portion longitudinally striped with the same color. Irides silvery. A large oblong deep blue-black ^{spot} marks the upper posterior part of the body. The upper portion of spiny dorsal, its soft part, together with the caudal and anal, rich yellow, the latter edged with pink, and the former with a large anterior blue-black spot. Ventrals and pectorals pale pink.

Length, 10 to 12 inches.

Habitat.—Sandwich Isls.

Remarks.—A common and beautiful species, called by the natives A-wa-la.





287

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Plaf. 130
Coryphæus bilineatus at.



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Cremilabrus modestus, Garrett

Cremilabrus modestus, Garr. Proc. Cal. Acad.
Nat. Sciences, Vol. 3, p. 107, 1867.

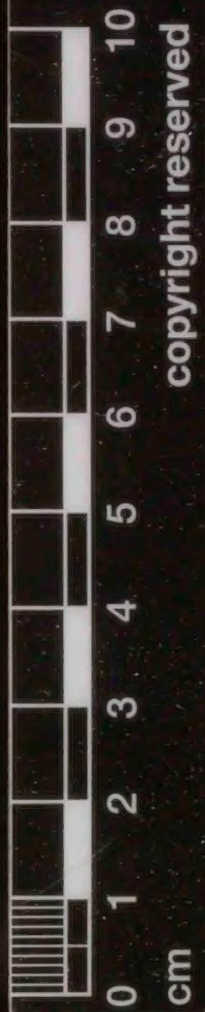
B. 6; D. 12-10; A. 3-12; V. 1-5; P. 17; C. 2, 1, 6, 6, 1, 2.

The greatest depth, which occurs beneath the origin of the dorsal fin, is about one fourth of the total length, and the greatest thickness is just half of the above mentioned depth. The head, which comprises a little more than one-fourth of the whole fish, presents a slight concave depression above the eyes. The preopercular serrations are very small. The eyes are sub-circular, their greatest diameter entering nearly six times in the length of the head, and twice in advance of their own orbit. The hinder tip of the maxillary reaches a vertical passing through the centre of the eye. Twelve longitudinal rows of scales may be enumerated between the lateral line and the vent; 10 rows on the side of the caudal trunk, and the median longitudinal row on the body contains 30 scales. The lateral line which passes over 33 scales consists of slightly branched tubes.

The dorsal fin extends over a base equal to half the length of the fish, caudal fin excluded. Its soft portion falls slightly short of one-third of the whole fin. The anal fin, which is nearly half as long as the dorsal, has its hinder termination slightly more posterior. The acuminate pointed ventrals, when closely appressed to the abdomen nearly reach the anal fin. The large caudal has its posterior upper and lower angles considerably prolonged and pointed.

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Color purplish-brown, passing into bluish-gray beneath, and obsoletely lined longitudinally with darker. A large oblong pale diffuse spot beneath the posterior end of the dorsal fin, which is directed obliquely downwards and backward. Irides silver, tinged with yellow. The dorsal fin is pale grayish, marked anteriorly with a large blue-black spot, its soft portion being tinged with reddish and margined above with yellow. The anal, ventrals and caudal are bluish-gray, the former posteriorly tinged with faded red and edged with yellow. Pectorals nearly colorless.

Length 18 inches.

Hab. Sandwich Isls.

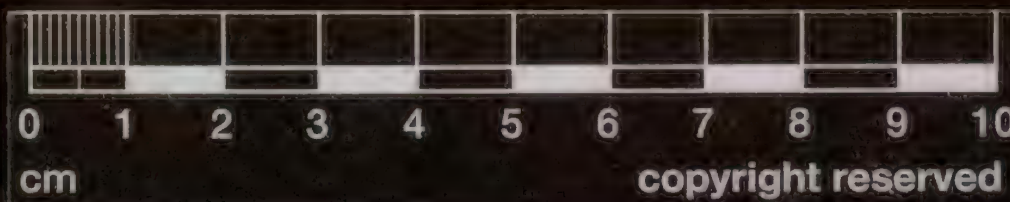
Remarks. We have obtained only two individuals of this species, both of which were exposed for sale in the Honolulu market. The colors, which are no doubt considerably changed when taken from the dead fish.



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Plaf. CXXIX Fig. 18.
Thal. muricatum



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Genus Cheilinosia, Garrett.

Form elongate-oblong, compressed, head rather long, pointed, sub-conical. Mouth small. Scales rough, with horizontal striae, and extend as far as the snout. Lateral line composed of simple tubes and interrupted as in the genus Cheilinus. Caudal trunk long and deep. Dorsal and anal rather short. Caudal broad.

We have established this genus for a small *Sanicich Island* Labroid, which differs from Cheilinus in its more slender form, longer head, shorter dorsal and anal, and simpler lateral line tubes.

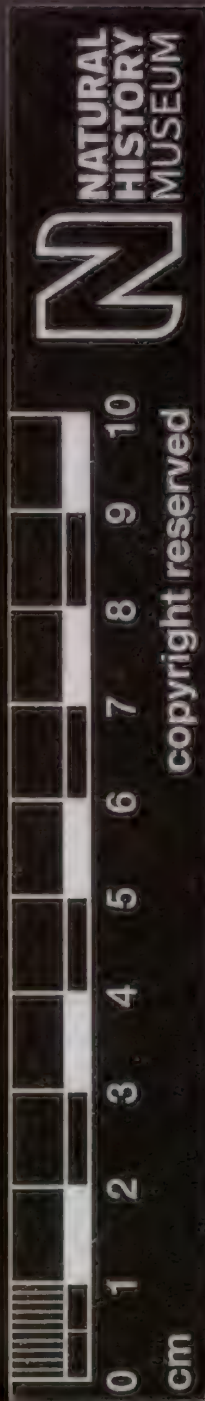
Cheilinosia semibaltatus, Garrett

D. 9-11; A. 3-10; V. 5; P. 11; C. 2, 1, 1, 1, 2.

Of this rare fish only a dried skin has come under my notice, consequently can give but an imperfect delineation of its characters.

The upper and lower caudal fin are quite similar, and the head comprises nearly a fourth of the fish. Scales of moderate size.

The dorsal fin commences above the base of the pectorals and extends over a base equal to half the length of the fish, caudal excluded. The spiny and soft portion are about equal length, the former the lower, and the fin tapers either way from the first articulated ray. The anal passes over a base equaling the length of the head, tapers away posteriorly, and approaches



a triph. nearer to the caudal than the fin above. The pectorals are rather small, and inserted beneath the hinder base of the pectorals, which latter are well developed.

The anterior half of the fish is lemon yellow, the posterior part, black as far as the end of the caudal. A black vitta commences at the end of the snout, passing through the eye, gradually dilating in its course until finally lost in the posterior black ground. A similar stripe extends from the nose to the origin of the dorsal fin. Vides golden yellow. Dorsal and anal light greenish, and the pectorals, together with the ventrals lemon yellow. A rose colored stripe starts from the hinder termination of both dorsal and anal, and gradually becoming wider on their way to the posterior angles of the caudal fin.

Length 3 inches.

Hab. - Sandwich Is.

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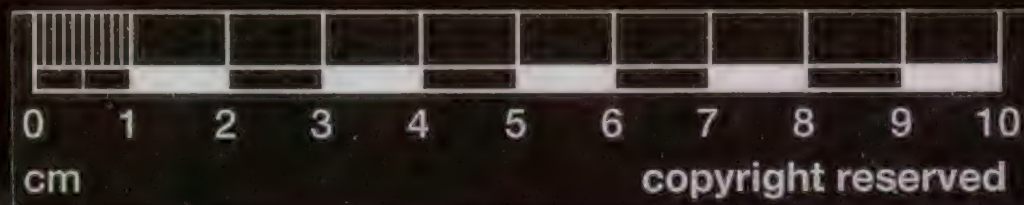


239

Parrotfish - Pops

x 2
Labroides dimidiatus

330



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Trilobatus
Chilinus ornatus, Günth. 383

Plate

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B. 5; D. 9/10; A. 3/5; V. 1/5; P. 11; C. 2, 1, 5, 5, 1, 1.

The dorsal region is slightly more arched than the ventral. The greatest depth of the body, which is at the origin of the dorsal fin, equals the length of the head, which latter constitutes two-sevenths of the entire length of the fish. The eye is rather large, nearly circular in shape, and its diameter not quite one-sixth the length of the head. The line of profile from the end of the snout to the nape is nearly straight. The posterior end of the maxillary reaches a vertical touching the anterior limb of the orbit. There ~~are~~ eight longitudinal rows of scales on the deepest part of the body, or nine including the elongate scales along the dorsal base. Two concentric rows on the cheek, each of three scales.

The dorsal fin takes its origin above the base of the pectorals, and gradually increases in altitude posteriorly, where it is rounded off. The anal is fully as deep as the soft part of the dorsal, and presents a posterior angle. The ventrals, have their first soft ray prolonged, and when closely laid back do not quite reach the vent. The pectorals are about the same length as the ventrals. The large caudal including the trunk equals the length of the head. When expanded its posterior margin is strongly convex.

The body is greenish gray, and in the living fish is marked with four or five vertical clouded darker bars which are most conspicuous posteriorly. Each scale on the flanks is ornamented with two, vertical linear spots, the anterior one brick red and the posterior light blue. Head pale green, passing into lead color beneath, and variously marked with irregular disposed vermilion lines and irregular shaped small spots, the former mostly radiating anteriorly from the orbit. The

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dorsal is mottled with pale and dusky green,
and traversed by a longitudinal vermicular
line, which becomes diffused over the soft part
of the fin. Its upper margin is more or less
edged with the same color. The anal is somewhat
similar to the dorsal in its color and markings.
Ventrals have pale green rays and red membranes.
Pectoral rays pale amber. The caudal is more
or less dusky olive centrally, becoming greenish
toward the margins and posteriorly vermiculated
with red.

Length, 8 to 10 inches

Habitat.—Society Isls. Kingmill Isls.

Remarks.—At the former group this
Cheilinus is called "Pe-pe-e"; and at the latter
"Ten-tai". In a rough drawing of a specimen
which I made at the Kingmill island, the
ground color is marked as blackish olive, and
has red spots on the breast, and a few small
emerald green ones on the tail. The spring part
of the dorsal is more or less reticulated with red.
Otherwise the colors and markings are similar.

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Tab. 181

Thalassoma Trilobatum



*chlorurus, M.**Chilinus punctatus, Garrett*

D. 5; A. 7-10; S. 3-5; P. 11; V. 1-5; C. 3, 1, 6, 5, 1, 2.

The greatest depth of the body is a trifle more than the length of the head, which latter enters about four times in the total length of the fish. Eyes large, circular, their diameter entering six times in the length of the head. The upper line of the snout is slightly concave. The super margin of the soft portion of the dorsal is rounded. The anal which is arched in its outline, commences opposite to the ninth spine in the dorsal fin. Ventrals large and rounded off posteriorly.

The living fish is olivaceous, with darker vertical cloud-like broad bars. Each scale on the body is marked with two round dots, the anterior one blackish-brown and the other bluish white. The head is dotted with vermilion-red, some of the dots having dark centers, and a few red lines in the region of the eyes. Some have red dots on the body. Fides greenish. The dorsal fin is olivaceous, becoming vivid-red posteriorly, reticulated with vermilion,

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and the spinous portion margined with the same color. The soft portion is dotted with bluish-white and the former part with greenish-yellow larger dots. Most generally there is one or two greenish ribbons along the upper half of the spiny portion of the dorsal. The caudal is colored and marked like the dorsal, but the dots are larger and the posterior part of the fin is livid-red. The anal is darker than the dorsal, reticulated and dotted like that fin, but the dots are very small, crowded and greenish-yellow; it exhibits also two lower intramarginal red lines. Ventrals livid-red, dotted like the anal, but the dots more remote, and the rays are livid. The pectorals have pale amber colored rays.

Length, 8 to 10 inches.

Habitat.—Society Isls, Kingmill Isls.
Pamotu Isls.

Remarks.—The reticulated fins and punctured appearance of this fish will at once determine it.

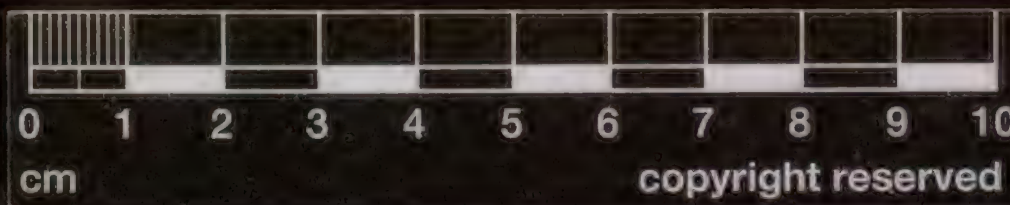




Plaf. 132

Thalassoma chlorurum

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Genus Cheilinicthys, Garret

We have established this genus for a gigantic Labroid fish which possesses all the external characters of the genus *Cheilinus* except in the simple tube of the lateral line, the absence of scales on the head, except the opercle and sub-opercle which are covered with large ones. The maxillary is more exposed than in the latter genus, the ventral, anal and the dorsal and anal fins are not scaled along their base.

Cheilinicthys gigas, Garret

This great Labroid fish I have seen captured at the Tabiti group, Fanning Is., and the Pannu archipelago. At the former location its vernacular name is "Marau" at the latter "Gapiro". Its flesh is of an excellent flavor and is much esteemed by both natives and foreigners. The largest example that came under my notice was caught with hook and line at Fanning's Island. It measured nearly 4 feet in length.

The length of the head and the greatest depth of the body are about equal, both being a little less than a third the total length of the fish. The eyes are rather ~~large~~ small, their diameter as compared to the length of the head is as one to eight. That part of the

head in advance of the eyes is conical, and the occipital line is strongly gibbous. Both dorsal and ventral outlines are gently arched and nearly similar in their curvatures.

The dorsal fin commences immediately over the base of the pectorals and extends over a base equal to one-half the length of the fish, caudal excluded. It gradually increases in altitude from the first to the eighth or ninth soft ray, posterior of which the fin is rounded off. The anal is half as long as the dorsal fin, and is also the deepest posteriorly.

The body is greenish-grey, the breast more or less tinged with buff yellow and the head light bluish. Each scale on the body has its anterior half nearly covered by a purple black spot which is posteriorly bordered with a vertical blue line. Breast dotted and beautifully freckled with light blue vermicular lines. Cheeks and opercular covers lined with the curved and vermicular ochre-yellow lines. The upper part of the head lined with bluish slate, and a few deep black lines bordered with the former blue radiate from the front and back margins of the eyes. Lips greenish. The dorsal and anal fins are greenish grey, becoming purple black outwardly on their soft portions and profusely maculated with small irregular shaped light

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green spots on their pale ground,
and their dark portions obliquely
lineated with the same colored
broken lines. Similar vertical
lines mark the caudal fin which
latter is purple black and colorless
on its posterior margin. The other
fins are slightly tinged with light
green.

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Tab. CXXXIII. Fig. A.

Thalassoma lineare



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No 440

fasciatus
Cheilinus cinctus Garrett 293

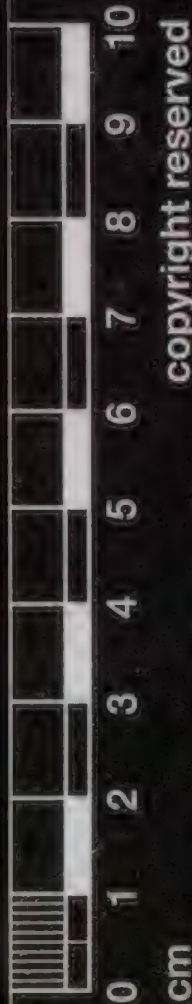
Plate

B. 3; D. 9-10; A. 3-4; V. 1-5; P. 12; C. 3, 1, 6, 5, 1, 2.

The head constitutes about one third of the total length, caudal excluded. A well marked concave depression may be seen upward and forward of the eyes. Eye circular, rather large, its diameter being one fifth the length of the head. The lateral line, which consists of simple tubes passes over twenty four or twenty five scales. There are twenty two scales in the median row of the body. The dorsal fin arises immediately behind the base of the pectoral, and gradually increases in altitude posteriorly where it is angulated. The anal, which does not extend quite so near the caudal as the fin above, has the fifth ray prolonged into a filament. The pectoral are fan shaped. The caudal has its upper and lower rays more or less prolonged in acute points.

Body greenish gray, with five, vertical, blackish or olive black, diffuse bars which are wider than their interspaces. A sixth bar crosses the tail. Each scale in the bars is marked with a vertical deeper black linear spot. The interspaces of the bars remotely dotted brick red. The lower part of the body is profusely dotted with vermilion red. The nape, breast and hinder half of the head, reddish, and the anterior portion of the latter is light olive green. A blackish band passes over the head, from eye to eye, and a short one on the nape, in which may be observed deeper colored spots. The region of the eyes and cheeks with abbreviated vermilion lines and dots. Dorsal

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and anal pale greenish yellow, becoming
paler outwardly, dotted with vermillion red, and
each marked with two marginal undulating
lines of the same color. Ventrals blackish becoming
colorless outwardly; rays reddish. Pectorals, colorless
membrane and reddish rays. Caudal blackish,
with a middle, greenish yellow, crescent, which
is dotted with vermillion; the upper and lower
portions faded red.

Length, 8 to 12 inches

Habits. - Kingsmill Isls.

Remarks. - Several specimens collected
at the above location. The filaments of the
caudal become prolonged by age, and the
bars deeper black in old than in young specimens.

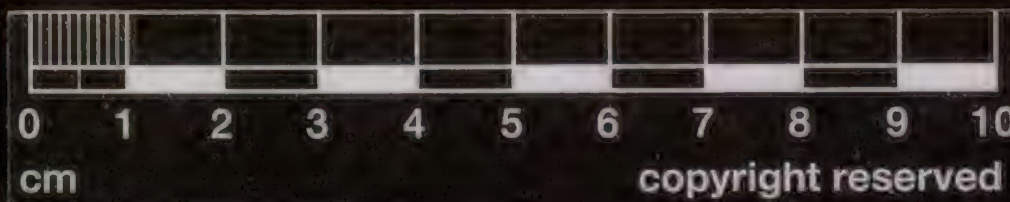


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Plaf. C XXXIV

Thalassoma lineare



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Cheilinus ^{radiatus} ~~serripes~~, ~~Garnett~~ 294 426

D. 9-10; A. 3-8; V. 1-5; P. 11; C. 2, 1, 6, 5, 1, 1.

This species is nearly similarly marked on out line both along the dorsal and ventral regions. The greatest depth of the body equals a third of the total length of the fish, the caudal keel excluded. There may be seven rows of scales between the dorsal fin and the vent, 21 on the median line, and the lateral line which is composed of simple tubular or rarely branched ones passes over 16 scales to the insertion and 10 beneath the bottom part is 25 in all. The head, which comprises nearly a third of the fish, is somewhat rectilinear in profile from the snout to the occipital region. The eyes are sub-orbital, in shape, their greatest diameter entering five and a half times, in the length of the head, and twice in advance of their orbit. The lower jaw is full and terminately rounded in front.

The dorsal fin commences over the ventrals and passes over a base equal to two-fifths the length of the fish. The three anterior articulated rays are graduated in the same scale as the spines, and the posterior ones exhibit an arched outline, rising above the general altitude of the fin. The anal is a trifle less than half as long as the head, and the caudal rays are even, though convex when expanded. The ventrals and pectorals are of about equal size.

The head and upper half of the body is oliveaceous green, the former darker, and the lower parts of the

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butter is of a light reddish hue
with ~~dark~~ margined scales. The
scales on the upper half of the body
are each marked with a central
subvertical oblong brown red spot.
The upper parts of the head are lined
with subhorizontal light red oblique
lines, and the lower half with oblique
rows of violaceous red lines. Gills
light green. The dorsal fin is of a
smoky blue tint, the posterior upper
half of the soft portion, transparent
and marked with irregular vermilion
red lines which more or less assume
reticulations. The remainder of the
fin is trilineated with three horizon-
tal wavy light vermilion red lines.
The basal half of the anal fin is
light vermilion red, the external portion
transparent colorless, the line of sep-
aration like the dorsal oblique.
Ventral vermilion, becoming paler
beneath, and the pectoral pale
pinkish red. Ventrals brownish red,
becoming light amber posteriorly
and centrally tinged with green.

Length 9 inches

Habitat. Viti Is.

Caught at Malolo with
hook and line.

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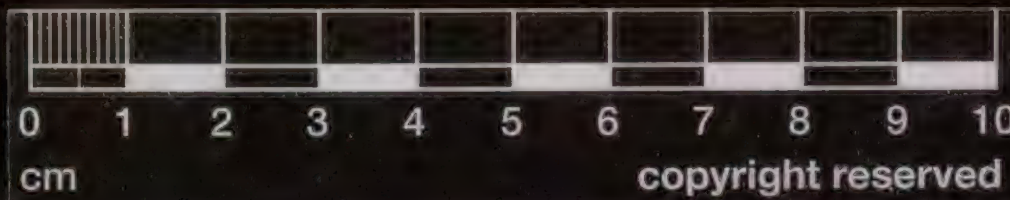
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Heterostichus rostratus

Plaf. 185. fig. A.

Chilinus radiatus



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Chaetodon ^{sea anemone, etc}
no 439.

295

D. 9-10; A. 3-8; V. 1-5; P. 11; C. 2, 1, 6, 5, 1, 2.

The upper line of profile is more strongly arched than the ventral region, and the depth of the body equals a third of the length of the fish, caudal excluded. There may be enumerated 8 horizontal rows of scales between the vent and the dorsal fin, and five rows along the side of the tail. The median series contains 22 scales, and the lateral line may be traced over 16 scales to the upper point of interruption and 10 scales below when it recommences. The water tubes are nearly all simple, though a few exhibit traces of bifurcation. The head is large, constituting nearly a third of the fish. Its upper line of profile rises up to the nape at an angle of about 33° , and exhibits a slight concave depression over the interocular region. The eyes are sub-circular, their greatest diameter nearly a sixth of the length of the head, and twice their diameter distant from the end of the upper jaw. The lower jaw is truncate, and the hinder tip of the maxillary is

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nearly or quite on a plain with the
anterior border of the eye. There may be
seen two concentric rows of scales on the
cheek and a row on the interopercle.

The dorsal fin arises over the
base of the pectorals, and the fin gradu-
ally increases in height to the eighth
or ninth soft ray, whence the fin
is rounded off, and the soft portion
comprises a little more than a third
of the fin. The anal fin commences
opposite the eighth, dorsal spine and does
not extend quite so far back as the fin
above. The ventrals and pectorals are on its base
of equal length, the latter rather broad, and the
and the former when laid back do not
reach the anal fin by nearly their own
height. The caudal rays are even,
and when the fin is expanded exhibits
a convex hinder margin.

Color grayish slate, sometimes
reddish grey, and light greenish
beneath. Each scale on the body with
a vertical oblong vermilion red spot,
which on the tail form round spots.
Irregular streaks of a vermilion red
or orange-red radiate in every direc-
tion from the eye, assuming retro-

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ulations on the occipital region, and more
or less bifurcate on the gill covers. Irides
yellow with an inner red circle.

The dorsal fin is nearly of the
same size as the back, and its spiny
portion is ornamented with two horizontal
red lines. Its soft portion is faintly tinged
with light reddish. The anal fin is
light vermilion red, with a violaceous
gloss. Ventrals light bluish, some times
light reddish with dashes of purple black.
The pectorals are pale yellowish. The
caudal is the same color as the body,
in its basal third, the middle colorless
and the posterior third light reddish.

Length 9-10 inches.

Hab. - Sandwich Isls.

Native name Papai

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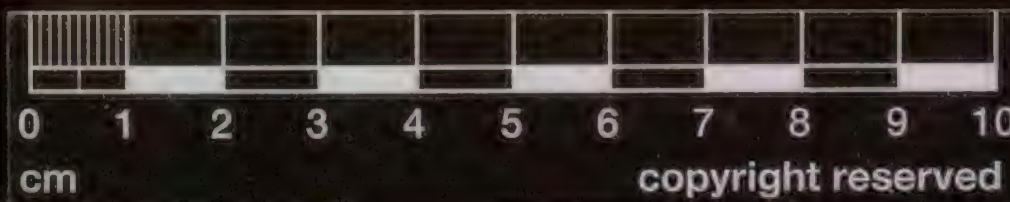
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Plat. 135. Fig. B.

Chilensis hexagonatus



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HISTORY
MUSEUM

Labridae No 406

D. 8-11; A. 3-10; 15-5; P. 10; C. 3, 1, 6, 2, 1, 2.

This elegant Labroid is oblong, elliptical, gently and equally arched above and beneath, and the greatest depth of the body equals the length of the head, which latter constitutes one-third of the total length of the fish, caudal fin excluded. The scales are disposed in more horizontal rows, two of which are above the lateral line, and are enumerated twenty three or twenty four in the median longitudinal row. The lateral line is interrupted as in the genus *Chelodactylus*. The head is rather large, pointed, and the large circular eyes extend three times in the length of the head.

The dorsal fin arises over the base of the pectoral fins, the spinous portion a little the longer, serrated above and the spinous tipped with little fleshy filaments. The soft portion of the fin is rounded posteriorly, the eighth or ninth ray tallest which is higher than the spiny portion.

The anal fin is as long as the soft part of the dorsal, shaped like that fin, and the first and second spinous portions each with a slender filament much longer than those on the dorsal spines.

The ventrals when laid back do not quite reach the vent, and the caudal when expanded is convex on its hinder margin.

Color violet or violet blue, passing into light reddish beneath, and saffron green on the caudal trunk. The flanks are decorated with six longitudinal equidistant vermilion red stripes which are narrower than those in *Tropaeus*. The upper portion

NATURAL
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of the caudal trunk is decorated with a
round eye-like black spot encircled with
a blue ring. The head is violaceous red,
passing into light red beneath and faint
punctured with white. The nape is linear
with irregular vermilion red lines. Wider than
them the head and traversed by two horizontal
red lines. The dorsal fin is light red, the
upper portion of the soft part colorless and
traversed by a deep violet blue stripe. The
caudal is yellow or sap-green, sometimes the
membrane yellow and the rays of the latter
have actual pale reddish becoming colorless
beneath and marked by a rich blue base
stripe. Ventrals rich blue, paler posteriorly.
Pectorals colorless.

Length 2 inches

Hab. Society Isls

This species is very abundant and
frequents branched corals.



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NATURAL
HISTORY
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Pseudochilinus octotaenia
Labrid No 407

297

D. 11; A. 3-9; P. 15; V. 1.

This species is evidently congen-
er with No 406. It is more strongly arched in both
upper and lower profiles than that species,
and the head is more pointed and depressed
above. The head comprises one-third of the
total length, caudal excluded. The eye is sub-
circular and situated so that the superi-
or rim of the orbit is nearly even with the
upper line of profile. The mouth is rather
deeply cleft and the lower jaw is furnished
with two front curved canines and the lateral
teeth are small, even, acute and disposed in
a single row. The upper teeth are smaller than
the lower ones and there are more anterior
canines. Gills large.

The structure of the fins are
much like No 406, except the pectorals
being more pointed and the soft dorsal
and anal more arched on their margins
and consequently deeper in proportion to
their length.

Color a fine red, yellowish be-
neath, and the flanks cross marked with
several longitudinal black narrow stripes.
Lower half of the head dotted with yellow.
Sides ruby-red with a blackish dusky-like
ring. The pectorals and ventrals pinky-red.
Spinous dorsal dingy red, its soft portion
together with the caudal and anal orange
red, the latter violet tinged on its base.

Length 4 inches.

Hab. - Sandwich Is.

Very rare.

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Pseudochiloneus eximius
Labroides no 400 *eximius* Dupl.

298

D. 10-11; A. 3-10; P. 10-12; R. 10; C. 4, 6, 8, 1, 2.

This little species is also congeneric with no 406 and 407, but is more oval in shape, consequently the dorsal and ventral outlines are more strongly arched, the latter like the most convex. The scales are large and the top of the head is depressed as in no 407, and comprises two-sevenths of the total length. The eye is ^{circular} in shape, the cornea oval, and situated high up near the upper lip of profile, both the same as no 407.

The shape of the fins are similar to the above mentioned species, except the soft portion of the dorsal and anal being much deeper and their margins angulate at the point they attain their greatest depth.

Color light red, passing on to greenish yellow beneath, and the flanks longitudinally lineated with white. The hinder margin of the opercle and preopercle bordered with purple and a blue line extends from the latter to the mouth. Ventrals red. The spinous dorsal dark red, the soft portion blotched with purple on its basal half, the upper part colorless with a brown blotch. Anal yellow with pinkish red filaments. Tentacles tinged with light pink. Pectorals pinkish red. The caudal with reddish ~~transverse~~ brown and violet red rays.

Length 3 inches.

Hab. - Sandwich Is. (Rare)

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Pseudochilinius evanidus 408



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298



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297

Pseudochilinius octotaenia



296
406

Taf. 136. Fig. B. *Pseudochilinius leaetania*



215
299

indicator
Epibulus luteus, Garrett.

Plate

D. 5; A. 9-10; S. 3-4; V. 1-5; P. 12; C. 1, 1, 6, 5, 1, 1.

The depth of the body at the origin of the dorsal fin equals the length of the head, or about one-third of the total length, caudal excluded. The upper line of profile from the end of the snout to the occipital region is concave. The eye is rather large, circular in shape, its diameter entering five times in the length of the head.

The spiny portion of the dorsal extends over a base equalling the length of the head. The seventh ray of its soft portion is the longest and when bent back reaches the caudal base. The anal base equals half that of the dorsal, and is deeper and more pointed posteriorly. The ventals are very long and acutely pointed.

Color yellow, becoming darker by age. Each scale marked with a vertical, linear, dusky spot, which assume rounded maculations on the tail. Sometimes the spots are reddish. There is most generally a blue ring around the orbit. Vides golden, with a ruby red inner circle. The caudal is orange red, fading into yellow posteriorly. Pectoral rays yellow. All the other fins more or less yellow, the dorsal with two anterior black spots and its spiny portion traversed by a red band and its upper margin edged with the same color. The slender termination of the soft part of the dorsal and anal, tinged light red.

Length 12 inches. Habitat. Society Is.

NATURAL
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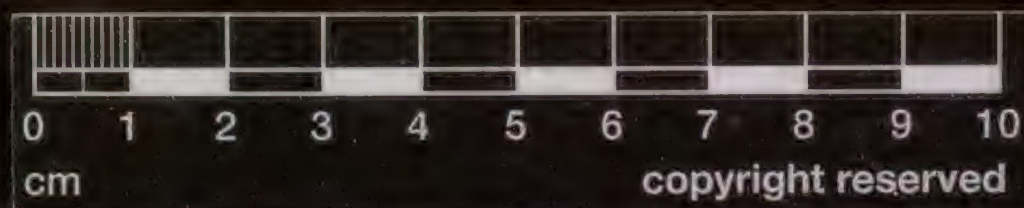
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Pl. 134

Epibulus insidiator**N** NATURAL
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MUSEUM

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Epibulus Tahitensis, Garrett.

Plate insidiator Cuv. et Val.

D. 9-10; A. 3-4; V. 1-5; P. 12; C. 2, 1, 6, 5, 1, 1.

The head constitutes two-seventh of the entire length. The profile along the nasal region is slightly concave. The dorsal region is rather strongly arched. Eye sub-circular, its diameter being one-fifth of the length of the head. There is eighteen scales in the middle longitudinal row of the body, and twenty-three in the course of the lateral line.

The sixth soft dorsal ray is the longest, and reaches posterior to the base of the caudal. The anal passes over a base more than half that of the dorsal.

Color brownish, with obsolete, vertical, cloud-like darker broad bars. Each scale marked with a vertical lineate black spot. A few bluish green round dots on the breast and the under lower half of the head. Gube tinged with light red. Irides olivaceous with an inner ruby red circle. Pectoral rays pale olive. All the other fins deep purple brown. The spinous portion of the dorsal is ornamented with middle, and marginal black stripes, and two anterior spots one black the other red.

Length, $\frac{3}{4}$ inches. Habitat. Society Is.

Remarks. A single individual of this species was obtained at the island of Tahiti.

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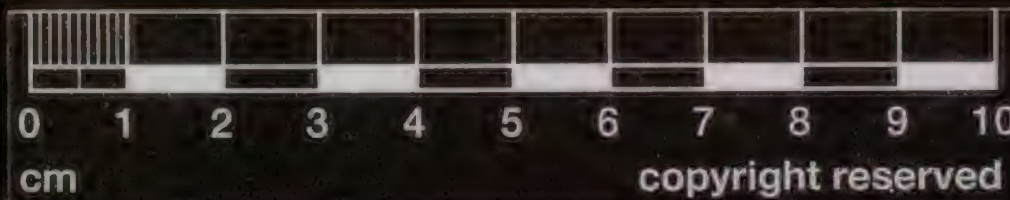
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Tahiti

Epibatus insidiator



N NATURAL
HISTORY
MUSEUM

*coeruleopunctatus**Amurpes ~~fabrilensis~~*

B. 6; D. 9-12; A. 3-12; V. 5; P. 12; C. 3, 4, 5, 8.

The depth of the body, taken at the origin of the dorsal fin, equals the length of the head, which latter constitutes one-third of the fish, caudal excluded. The eyes are of moderate size, their diameter comprising one-seventh the length of the head. The tubes of the lateral line are branched.

The dorsal fin extends over a base which equals half the length of the fish. The anal, which terminates with the fin above, has a base equally as long as the soft portion of the dorsal. When the ventrals are closely appressed to the abdomen, their tips covers the vent. The hinder margin of the caudal is convex.

Color deep olivaceous, passing into red beneath. Each scale is marked with a round, black marginal blue spot, and irregular curved streaks of the same color may be observed on the breast and head. Fricol pale green, with an inner red

NATURAL
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MUSEUM

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circle; lower dark green. Dorsal, anal and ventrals, perianth red, the latter anteriorly margined with blue, and two or three streaks of the same color may be seen in their middle portion. The dorsal is margined above with blue, and an intramarginal black throat-like line. The whole fin is also dotted with the former color. The anal is margined like the dorsal, and there are two horizontal rows of blue dots on the basal half. The pectorals are nearly colorless, except their base and upper edge which are margined with blue. The caudal is purplish red, and spotted with blue.

Length, 10 inches.

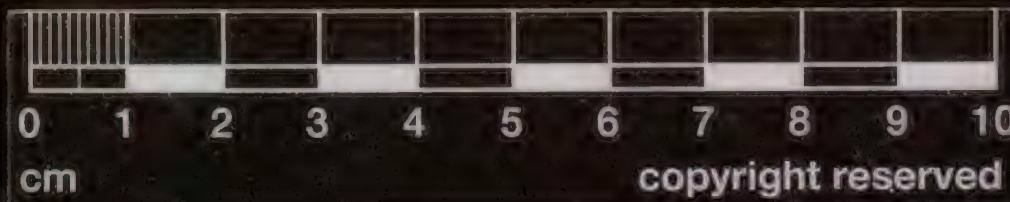
Habitat: Tahiti.

This fine species is rarely seen at Tahiti, where its vernacular name is "Po-on". The ground color, crown's line on the head, and spotted fins will distinguish it from *luciferus*.





Plat. CXXXVIII *Anampses cocralermaculatus*



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HISTORY
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Genus *Mamipetes*, Guvier.

Form oblong, rather strongly compressed. Head naked, moderate size, subconical. Teeth, two in each jaw, anterior, stout, and projecting in front. Gills united by an isthmus. The lateral line which consists of both simple and arborescent tubes, is abruptly bent downward as in the genus *Gulis*. Scales large. The lower pharyngeal plate is T shaped, and armed with two or three rows of stout conical or compressed teeth. The two upper plates are triangular and armed with teeth similar to those beneath.

These fishes may be easily distinguished by ^{their} peculiar dentation, but in every other respect they can scarcely be known from *Gulis*. They are ornamented with beautiful colors, arranged in spots or streaks. Their flesh is excellent, being far superior in that respect to *Gulis* or *Scarus*.



Mumpses Curvieri, Lucy & Guin.

Mumpses Curvieri, Lucy & Guin. *Proc.*
Proc., p. 226, Pl. 58, fig. 1.

D. 9-10; A. 5-12; V. 5; P. 12; C. 2, 1, 6, 6, 1, 2.

The greatest depth of the body is equal to about two-seventh of the entire length, and the ^{head} comprises a fourth of the fish. The upper and lower outlines are regularly arched, both commencing at the snout and terminating at the tail. The eyes are moderately large, subcircular in shape, their diameter entering six times in the length of the head, and twice in advance of their orbits. The hinder termination of the maxillary is on a plain with the pre-nasal opening. There may be enumerated twenty six or twenty seven scales in the median row of the body. The lateral line, which extends over about twenty nine scales, consists of simple horizontal tubes.

The dorsal fin, which commences a trifle in advance of the origin of the lateral line, passes

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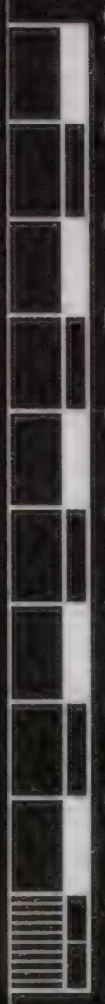
over a base which equals in length more than twice the length of the head. The anal fin approaches a triangular shape more the caudal than the pectorals. The ventrals do not quite reach the vent, while the pectorals extend as far back as the origin of the anal fin. The caudal is rather small, convex on its posterior edge, and rounded off at the angles.

Color, a fine brown, which gradually passes into an intense red on the lower third of the body, and bluish white on the breast and lower part of the head. Each scale is ornamented with a bluish white round spot, which, along the dorsal and ventral regions become smaller and irregularly disposed. The larger ones have a dark posterior shadow. The breast, and lower half of the head are profusely marked with small, irregular shaped, dusky marginal, vertical red spots, which in the former part assume more or less broken longitudinal stripes which gradually blend with the same color on the lower part of the body. The upper half of the

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Head is closely dotted with black
white. Vires greenish yellow, with
a narrow golden ring next to the cu-
nea.

The dorsal, anal and ventrals
are of a fine carmine red, the
former not so deeply colored as
the latter fins. The ventrals are she-
athed in the direction of their rays
with rich blue. The two pectoral
fins are marked with several
horizontal blue streaks, sometimes
edged with black, those on the dorsal
being more or less interrupted, pale,
and generally somewhat reticulated
on the soft portion of the fin. Ventrals
and caudal fin are yellow,
the latter shaded posteriorly with
light carmine and sometimes the
corners are edged with blue.

Length, 12 inches.

Habitat: Sandwich Is.

At the Sandwich Is., where
this species is somewhat abundant,
its vernacular name is "O-pu-deu-
lany" and the word "figure" is some-
what faulted, in shape and coloring.

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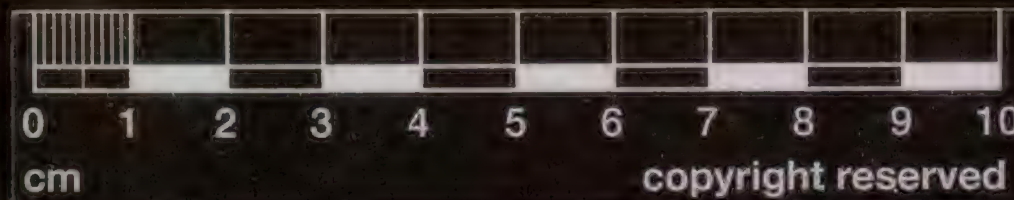
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Plaf. CXXXVI. Fig. A. *Thalassoma cuspidatum*



Diadematus
Anampses elegantissimus, ~~Günther~~

303

Plate 477

D. ?; A. 4-12; S. 3-12; V. 1-5; P. 12; C. 2.1.5.5.1.2.

This elegant *Anampses* will come in the same division as *A. opule*, *holii*, characterized by the vertical lines on the scales and truncated caudal. The greatest depth of the body equals the length of the head which latter is a little more than one-third of the fish, caudal excluded. The eye is rather large, nearly circular, its diameter being about one-seventh of the length of the head. The caudal is abruptly truncated. The dorsal posteriorly arched. Ventrals prolonged in an acute point.

The ground color of the dead fish is deep rich bluish green. The anterior half of the head, sap green. Anterior interocular band, and central portion of gill covers rich blue. A vertical sap green diffuse bar beneath the anterior third of the dorsal. Each scale with vertical dark margined blue line. Ventrals sap green. Dorsal, caudal, ventrals and anal light blue, the former traversed by a pale purple chain-like band, and the latter which is much paler outwardly, is marked with a longitudinal basal stripe, and a row of oblong spots, pale purple. Ventrals, with a sub-marginal purple stripe which runs parallel to the rays. Pectorals light green, becoming blue above and along the base, which is black. Caudal tinged centrally, with greenish and traversed by two, longitudinal, sub-marginal purple stripes.

NATURAL
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Length, 11 1/2 inches.

Habitat. Kingsmill Is.

Remarks a single specimen procured
at the above group of islands. The colors were
noted from a dead fish and the description,
from an accurate drawing made at the same
time.



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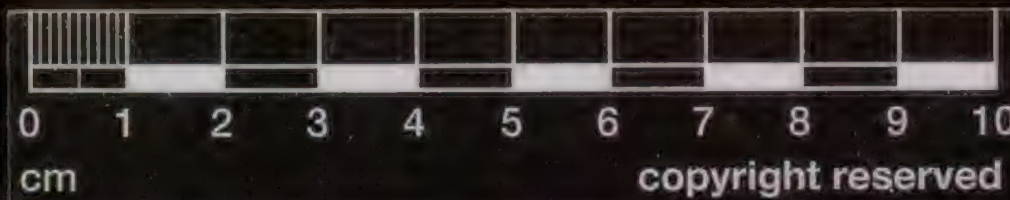
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Keigsmill, Gal.

Ref. 138¹³ - *Thalassoma kribia*



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MUSEUM

Mamipies ~~semicinctus~~

D. 6; A. 9-12; V. 1-8; St. 3-12; P. 12; C. 3, 1, 6, 8, 12.

The general aspect of this species is very much like *st. tuberculatus*, but differs much in color and markings. The greatest depth of the body, as compared to the entire length of the fish, is as three to ten. The lateral line, which contains twenty seven or twenty eight scales in its course, has both simple and bifid tubes. The head comprises nearly a fourth of the total length. Eyes subcircular, their ^{diameter} extending about seven times in the length of the head.

The dorsal fin takes its origin immediately above the commencement of the lateral line, and extends over a base which is a trifle more than half the length of the fish. The caudal is biconcave.

Color, dark purple blue, with a soft green gloss, and fading into a light blue beneath. Each scale is marked by a vertical wavy light

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blue line. A few irregular dots and
lines of the same color may be seen
on the upper half of the head. A
band passing under the chin and
over the upper lip, rich blue.
Irides greenish yellow, shaded with
dusky. An elongate black spot, mar-
gined with blue, marks the base of
the pectorals.

Dorsal greenish yellow, passing
into brown above, the former color
irregularly dotted with light blue.
The upper edge is margined with
light blue and a fine intramarginal
throat-like black line. Anal light
blue, with two horizontal purple brown
bands. Ventral greenish yellow, striped
in the direction of the rays with light
blue, and posteriorly shaded off with
purple red. Pectorals light greenish, the
upper margin light blue. Ventrals light
blue and streaked with purple brown.

Length, 10 inches

Habitat, Sulu Islands

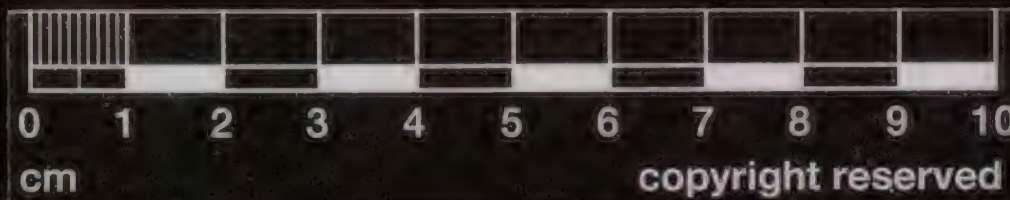
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Lampro.

Taf. 138 st *Thalassoma diadema* var.**N** NATURAL
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godeffroyi, Stead

Stenopus ~~spide~~, Godeffroy

R. 9-12; A. 3-12; V. 1-5; P. 12; L. 2, 1, 6, 6, 1, 2.

This large species has a deeper body than *S. loricatus*, in consequence of the dorsal region being more arched than in the latter. The greatest depth being nearly a third of the total length, while the head constitutes a little less than a fourth of the fish. The facial profile exhibits two slight concave depressions, one in the occipital region and the other in the snout. The eyes are rather small, oval in shape, and their horizontal diameter enters eight times in the length of the head.

The dorsal fin passes over a base which equals twice the length of the head. The caudal is convex behind, and the angles are acute and slightly produced. All the fins are less developed than in the two preceding species.

The head and body is of a pale olive color, with a tinge of light brownish red on the sides.

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Each scale is ornamented with a vertical bluish or greenish line, and reticulations of the same color may be seen on the nape and breast. The end of the snout, and the region of the eyes, are yellow, and the lower portion of the head, light blue. The whole head is marked with close set, blue reticulations and irregular shaped spots and short lines. Gills light green.

The dorsal fin is reddish yellow, margined, and irregularly horizontally streaked and reticulated with bluish green. Ventrals orange red, becoming deeper red above and beneath, where it is margined with bluish green, and generally spotted with the same color. The anal is tawny, same color, and marked somewhat like the dorsal. Ventrals same color, spotted and margined with bluish green. Pectorals amber yellow, margined above with bluish green.

Length 14 inches.

Habitat: Sandwich Is.

The native name of this species is *Pu-lu*.

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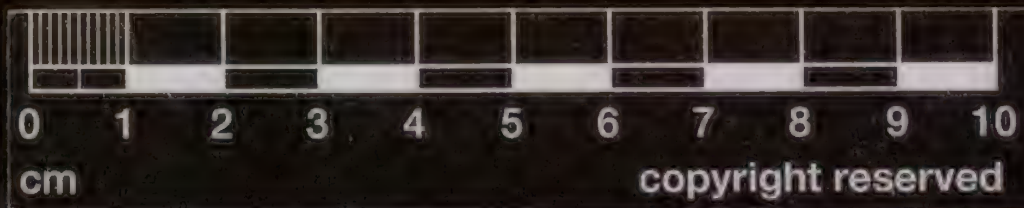
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Lacépède.

Laf. C. & L. Anampses godeffroyi



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Genus *Helthojulis*, Bleeker.

Form oblong, compressed. Head well developed, subconical. Denticles in a single row on either jaw, converging, becoming gradually larger anteriorly, but are deficient of the posterior part, and a hook-shaped tooth. The gill rakers consist of small spinous points. The opercular bones of the upper mandible, white, project from the angle of the mouth. The preopercle has the whole margin free, and is marked with a series of narrow, parallel, transverse, large, pointed, scales. Large, oblong, pentagonal, and the opercle more or less subtriangular. The upper, lower and anterior parts are covered with exuding, by fine concentric striae, the latter also exhibit a small, strongly marked radiating line. A few curved lines may be observed on the upper surface. The lateral line is the same as in *Helis*, except the latter being simpler. Caudal rays 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

NATURAL
HISTORY
MUSEUM



embryonic form.

This genus may be distinguished from *Stethojulis* by the peculiar structure of the teeth, large preopercular bone, small, transparent bones, the first two of the pectorals simple, trace in the lateral line and structure of the scales.

The three species in which the preopercular bone, have a wide band starting from the shoulder and directed posteriorly. In *Stethojulis*, it is very short, in *Stethojulis* it extends a little behind the pectorals, and in *Stethojulis* it extends to the base of the caudal fin.

188

Stethojulis axillaris, n. sp.

Julis axillaris, Day at Gannet, vol. 3
p. 222.

D. 6; L. 2-11; A. 11; P. 10; V. 10; C. 10.

The general aspect of this species is somewhat robust. The length is compared to the greatest height of the body as 10 to 12. The head is

head comprises a little more than a fourth of the fish. The upper and lower outlines are nearly similar in their curvature, the upper exhibiting a slight upward depression above and forward of the eyes. The eyes are moderate in size, their diameter being one-sixth the length of the head. From eight scales may be counted in the corner of the lateral line, ten to fifteen in the middle of the body.

The dorsal fin arises immediately behind the hinder opercle, and its spiny portion is low, the rays gradually increasing in height to the first articulation, whence the fin slightly tapers posteriorly, but preserving a gentle convex bend. The vent is nearly similar in shape and size to the soft part of the dorsal, and corresponds with that fin. The vent is much less than half as long as the anal base. The pectorals rather large. The anal is somewhat exhibited in particular convex margins.

Color light greenish along the upper half, which is also profusely

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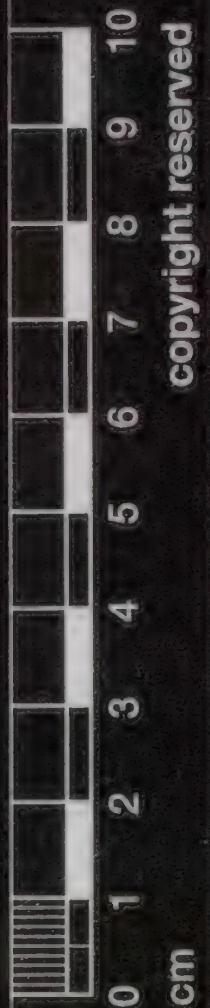
junction with the pale blue. The two
ventrals, which is immovable, is of
a copper red that fading into bluish
white beneath. Two small scintillated
spots mark the posterior end of
the lateral line, each with a blue blot
superior and blue inferior. A blue margin
and yellowish band on the humeral
region. Dorsal golden yellow. The dorsal
and anal fins are light greenish
overlaid and joined like the upper
half of the body. All the other fins
either colorless or tinged with steel
blue. An elongate black spot under
the base of the pectorals.

Length, 5 inches.

Habitat: San Juan & Isla. Perich, Ctr.
to new fish.

Lacey and Garrison obtained their
specimens at the former locality, where
it is common in their very young form. In
they give but five rays to the dorsal fin,
and two spines, and to the anal fin
all which have passed under my eye
had six branchial rays and three in
the anal, the first very small might be

NATURAL
HISTORY
MUSEUM



carefully malakod. In their list of descriptions they state that the body is rose color, which among larvae soon changed to that done by the spider. My drawing is from a larva which came from a specimen, measuring 2.5 inches in length, which is much larger than any observed at the Society Is. Museum. At the former group of larvae is

where the drawing and description are from a dead example. I will remark that at the latter island I obtained two living specimens from which is length, which had the upper half of their body clouded with pale greenish fawn and light dusky brown. The lower parts bluish white, the two parts separated by an absolute sudden copper red stripe, which on the head became yellow edged above with rose and green. The blue frontone, two small ocellae, and shoulder band are constant and reliable characters.

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MUSEUM

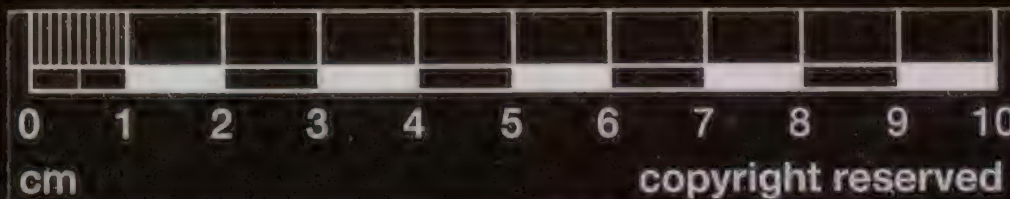


187

306



Laf. 1884. Fig. 1. *Sphaerularia axillaris* - Lando's Bupala



N NATURAL
HISTORY
MUSEUM

casturi, Ste

Stethojulis ~~hemeralis~~ ~~parvifrons~~

3.5-5; D. 9/10; A. 3/10; V. 1/5; P. 13; C. 2, 1, 5, 6, 1, 2.

The greatest depth of the body equals the length of the head, or a little more, and as compared to the total length of the fish is as one to four. The dorsal and ventral outlines are quite similarly arched. The eyes are of moderate size, their diameter entering six times in the length of the head.

The dorsal fin commences above the anterior base of the pectorals, is quite low anteriorly, the rays gradually increasing in height and extend over a base equal to that of the second dorsal. The soft portion is a trifle the highest, and is similar to the fin beneath. The ventrals are small, and the pectorals, together with the caudal are posteriorly concave.

Color: upper half of the body olive-brown, the lower half bluish-white, the two colors separated by an emerald green line, which is margined with dark-green, shaded off with yellow beneath, and extends from the head to the caudal. A broad vermillion band on the shoulder, which curves slightly downward but not extending posterior to the tip of the pectoral fin; it is margined above and beneath by emerald-green lines which are edged with dark green, the lower one being a continuation of the one that traverses the whole length of the body. Head yellowish-green, the lower third cupreous-white; it is ornamented by four narrow fasciae of a rich light

NATURAL
HISTORY
MUSEUM

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cm

blue, margined with dark green; (the arrangement of the fasciae can be best understood by consulting the figure) sides golden, tinged with green; cornea black, all the fins colorless except the dorsal which is dusky-amber, and its soft portion has a colorless upper margin.

Length 5 inches.

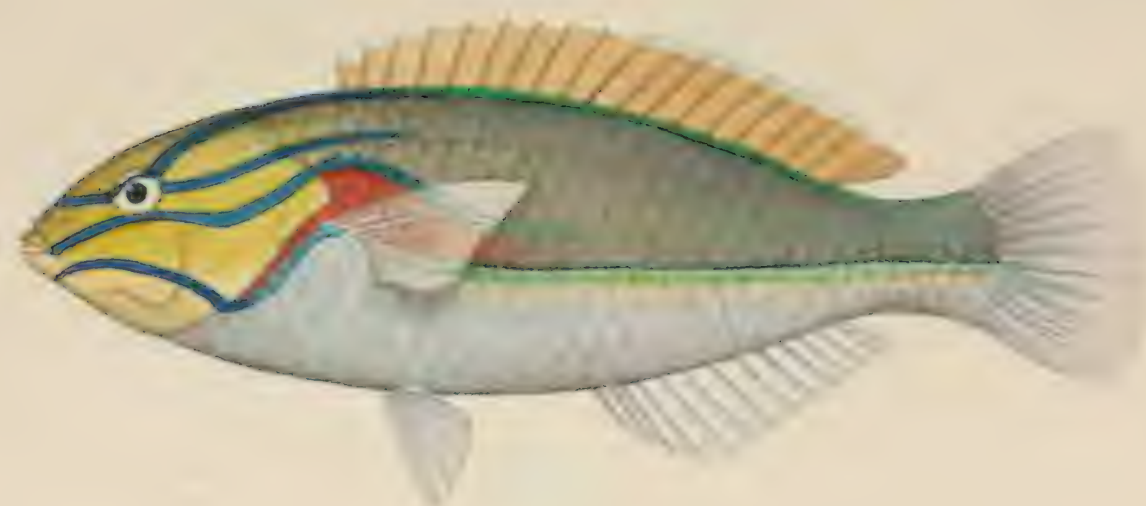
Habitat. Society Isls. Kingman's Reef.

A very rare species, called Paou by the natives of the former group.



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NATURAL
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MUSEUM

307

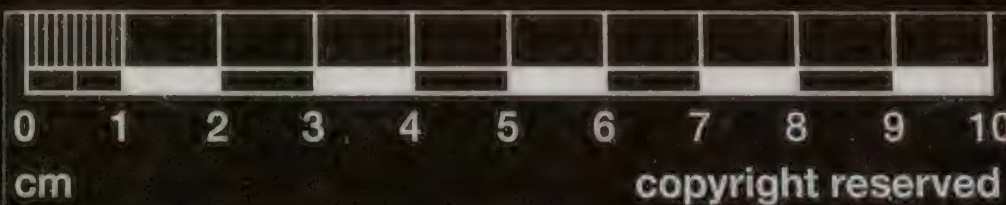


Stethojulis castaneus Raf.

Raf. 141. Fig. 5.

Stethojulis castaneus

195



N NATURAL
HISTORY
MUSEUM

Stethojulis albostriata, ~~Mon.~~ 193 192
Gulbrethys *baltata*, ~~Lucy et Guim.~~ 308

Julis baltata, ~~Lucy et Guim.~~ *Proc. Zool.*
p. 27. Pl. 55. fig. 1.

D. 9-11; A. 3-11; L. 1-5; P. 13; C. 1-1-6-6-1, 1.

The general shape is nearly the same (head ^{up to the beginning of the}) as *J. axillaris*. ~~and~~ The depth ^{of the body} is the same proportion to the entire length as in the latter species. The circular eye is in its diameter one-fifth the length of the head. There are twenty six or twenty seven scales on the curve of the lateral line.

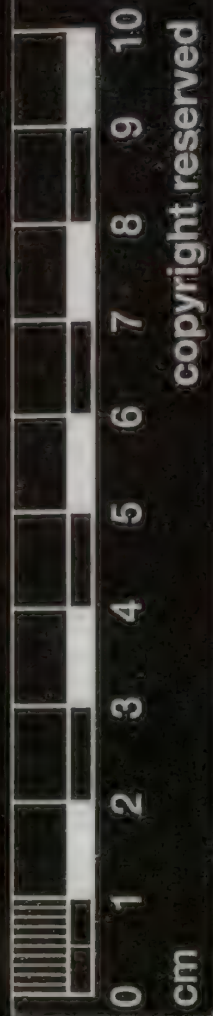
The dorsal commences a trifle posterior to the hinder corner of the opercle, and is nearly equally divided in its two portions, the soft portion the highest, and tapering gradually, as they pass from the first articulate ray. The anal is slightly deeper than the dorsal, tapering away from the first branchial ray and terminating with that fin. The ventrals when closely appressed to the belly do not reach the anal by more than their own length. The pectorals are twice as long as the ventrals. The caudal ^{posterior} convex when expanded.

Color rich dark green, along the upper half of the body, and ^{pale} bluish green beneath. A broad red band, bordered with blue, extends from the opercle flap to the lower base

as in the former species but 5 branchial rays and 2 anal spines. Their figure is very like and pale in coloring.

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HISTORY
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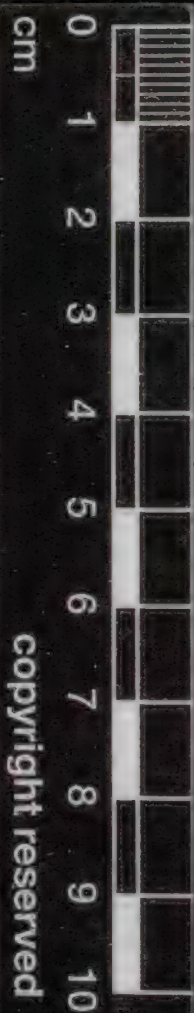
2



of the caudal fin. The blue margins of the b.
have black thread like edges.

The body above
and the lower
I found a
perfect to
the head b.
indicated with
ventral along
the one piece
faintly, touching
inter at the
mold-green a
with, and a
from the. It is
from the
the operculum
in the eye, a
the even brown
scales which
terminates at

the former
the branch
lateral spine
is very
in color



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The body above the medial line is not dark green and the breast, belly, and flanks are bluish green. A broad red band passes from the axilla of the pectoral to the caudal, dividing the two ground colors; the band traverses the lower portion of the tail, and is bordered with blue, dark margined lines, the lower is continued along the lower ray of the caudal, and the upper one passes across the upper portion of the opercular apparatus, touching the lower base of the orbit, and terminates at the angle of the mouth. The head is emerald-green above, straw-yellow on the sides and beneath, and a purplish tinge on the opercular apparatus. A violet-blue, dark margined sashed - blue passes from the chin to the lower posterior edge of the operculum. Three similar sashed radiate from the eye, one passing forward and over the head, the second traverses the dorsal outline, along the row of scales which envelops the base of that fin, and terminates at the tip of the upper caudal ray. The

308

as in the former species but 5 branchial rays and 2 anal spines. Their figure is very like and paler in coloring.

NATURAL
HISTORY
MUSEUM



third one is short and directed backwards on the shoulder. Ventrals pale yellow. The dorsal and caudal fins are light-red, the former with a few dusky markings of the spinous half, and the soft portion has a narrow uncolored margin with a fine black line beneath. The other fins are uncolored, as a very pale bluish tinge.

Length, 5 inches, 6 lines.

Habitat: Sandwich Is.

Native name, Palermo

Observations.—This pretty little species is extremely rare at the above location. We have only met with two specimens, one taken on the weather coast of Hawaii, and the other on the lee coast of Oahu. They were both in rather bad condition for description, or figuring with as much exactness as we could desire. Quoy and Gaimard obtained their specimen at the above location as in the former species but 5 branchial rays and 2 anal spines. Their figure is very poor and false in coloring.

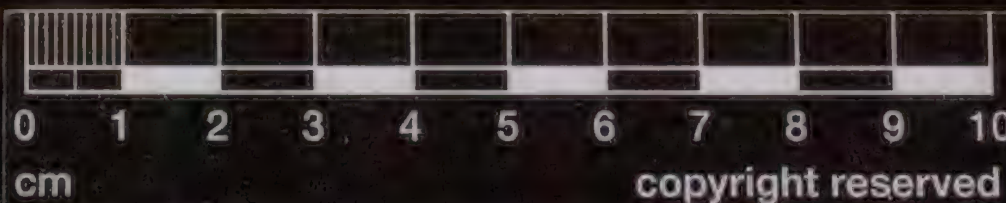




Faustinae sp.

Def. 141. Fig. 13

Stethojulis alborivittata



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PlatyGLOSSUS GEOFFROYI, Latr.

platy glossus, Latr. et Geoffroy, *Latr.*
Magasin, p. 270, pl. 32, fig. 3.

D. 5; A. 9-11; P. 2-11; V. 1-5; U. 1; C. 2, 1, 5, 1, 2.

The depth of the body equals one-third of the total length, and the stribecaris one-third of the greatest depth. The head, which comprises a fourth of the fish is gently convex on both upper and lower profiles. The eyes are rather large, circular, their diameter entering five times in the length of the head, and once in advance of their insertion. The scales of the lateral line are either bifid or bifid, and make twenty-eight or twenty-nine scales. There are thirteen horizontal rows of scales between the base of the dorsal fin and the vent, two of which are above the lateral line. The median row contains twenty-five or twenty-six scales.

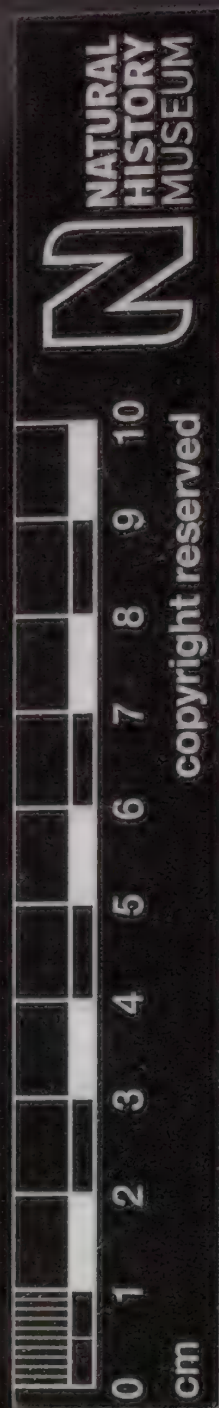
The dorsal fin commences just above the origin of the lateral line, and runs over a base equaling more than half the length of the fish. It has a very gentle increase in height from the first to the last rays, and is convex above. The

NATURAL
HISTORY
MUSEUM



anal fin is equally as long as the base
of the soft part of the dorsal, slightly
tapering anteriorly, but preserving
its convex margin, and as long as the
little nearer to the caudal than the
first bone. The ventrals have their tips
considerably prolonged, and when bent
backward reach the vent. The pectorals
are rather large, their tips extending
a little behind the origin of the anal
fin. The caudal is posteriorly - slightly
convex.

Color mainly uniform, golden brown,
or deep brown, becoming darker
on the lower parts. Each scale marked
with a ventral rich blue oblong spot,
shaded off posteriorly with black. On the
throat the spots form short irregular stripes
marginated with black. The whole head
is also covered with variously curved
and straight similar colored stripes. The
yellow varied with brown, with the fins,
except the pectorals are more profusely
margined with black margins rich
blue spots, those on the dorsal are
disposed in three horizontal rows, the two
lower are the larger, sometimes the basal
row uniting into a band. The anterior



most of the dorsal is occupied by a large
red and black spot, or a red and yellow
one. All the vertical fins have narrow
black margins.

Length, 9 inches.

Habitat: San Juan Is.

The figure of this species in the
Zoology of the Voyage of Magellan is very
incorrect in color, having a light blue
ground color and the fins more or less
yellow.

The text reads thus "coryphæ subcylindricus
leo, oculis numerosissimis sparsis; pin-
nae omnes et dorsales breviter, cauda rotunda."
L. 5; P. 11; R. 11; A. 2-13; C. 15. The spec-
imens were procured at the San Juan Is.,
where I procured several examples, but
none with bluish ground color.

NATURAL
HISTORY
MUSEUM

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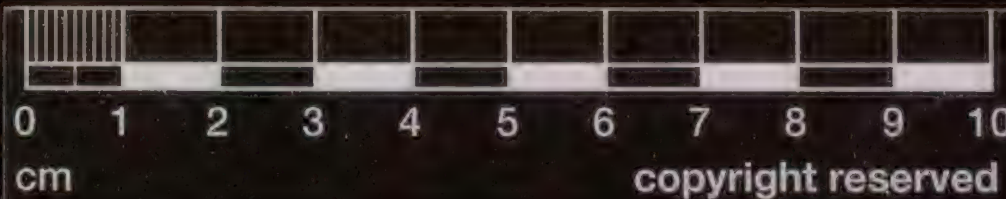


309



Macropharyngodon geoffroyi
Laf. 182 Fig. B

193



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3/10
Mbs missing
9



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310

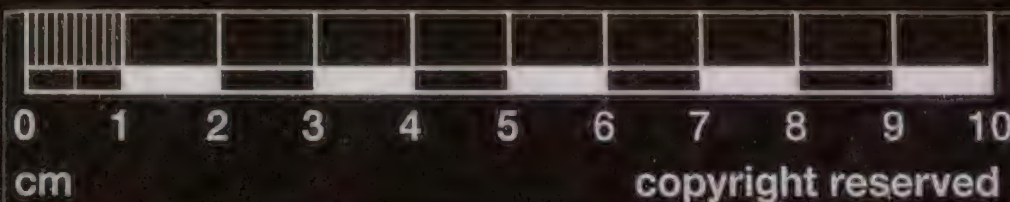


n.b. 1 Höcker-flecken auf jeder Flosse
 Hyacinth Blatt über Adil
 Stoffen schwarz-farbig.

Macropharyngodon milcagris
 (Ref. 115 Fig. 5)

Tulus

Sugale
Panoka
Somoe



N NATURAL
 HISTORY
 MUSEUM

Gulis No 483

Kottawa

D. 9-11; A. 3-11; P. 5; P. 13; b. 3, 1, 6, 1, 3.

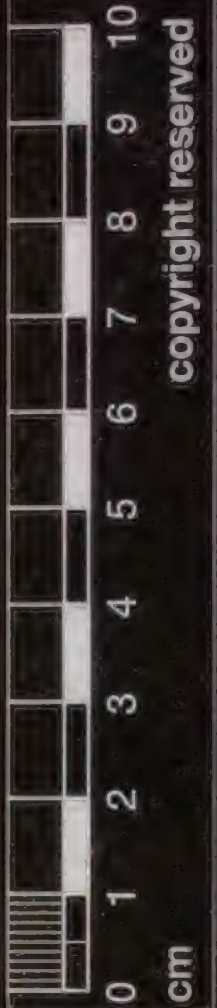
The greatest depth of the body equals about two-sevenths of the total length of the fish. Both upper and lower profiles are regularly and gently arched. The head, which is rather pointed, comprises one-third of the total length, caudal excluded. The circular eye contains six times in the length of head. Scales large, somewhat lozenge shape in their imbrications. The tubes of the lateral line are simple.

The dorsal fin is gently arched, highest at the first articulated ray. Caudal truncate, when expanded slightly convex. Anal commences opposite to the second ray of the soft portion of the dorsal and slightly tapers posteriorly. Ventral acuminately pointed.

Color somewhat variable; sometimes pale greenish gray, the upper part of head light olive green, passing into greenish yellow beneath. Again some are rich dark sap green, paler beneath, and the belly bluish green. Head light sap green. Scales, each with an oblong vertical purple-brown spot, paler beneath.

NATURAL
HISTORY
MUSEUM

2



and gradually becoming vermilion or
copper red posteriorly. The upper anterior
portion of the body with small round light
red spots. Breast irregularly striped with
light red. Two yellow cloudlike diffuse
spots on the dorsal region, both enclosing
red spots and the anterior one bounded
behind by a large diffuse black spot.
Head beautifully banded with light
red, the band margined with pale lake.
Ventrals and pectorals nearly colorless the
former sometimes tinged light green. The
Iris purple brown with a pale ring. The
color and markings of the vertical
fins can be best understood by consulting
the drawings.

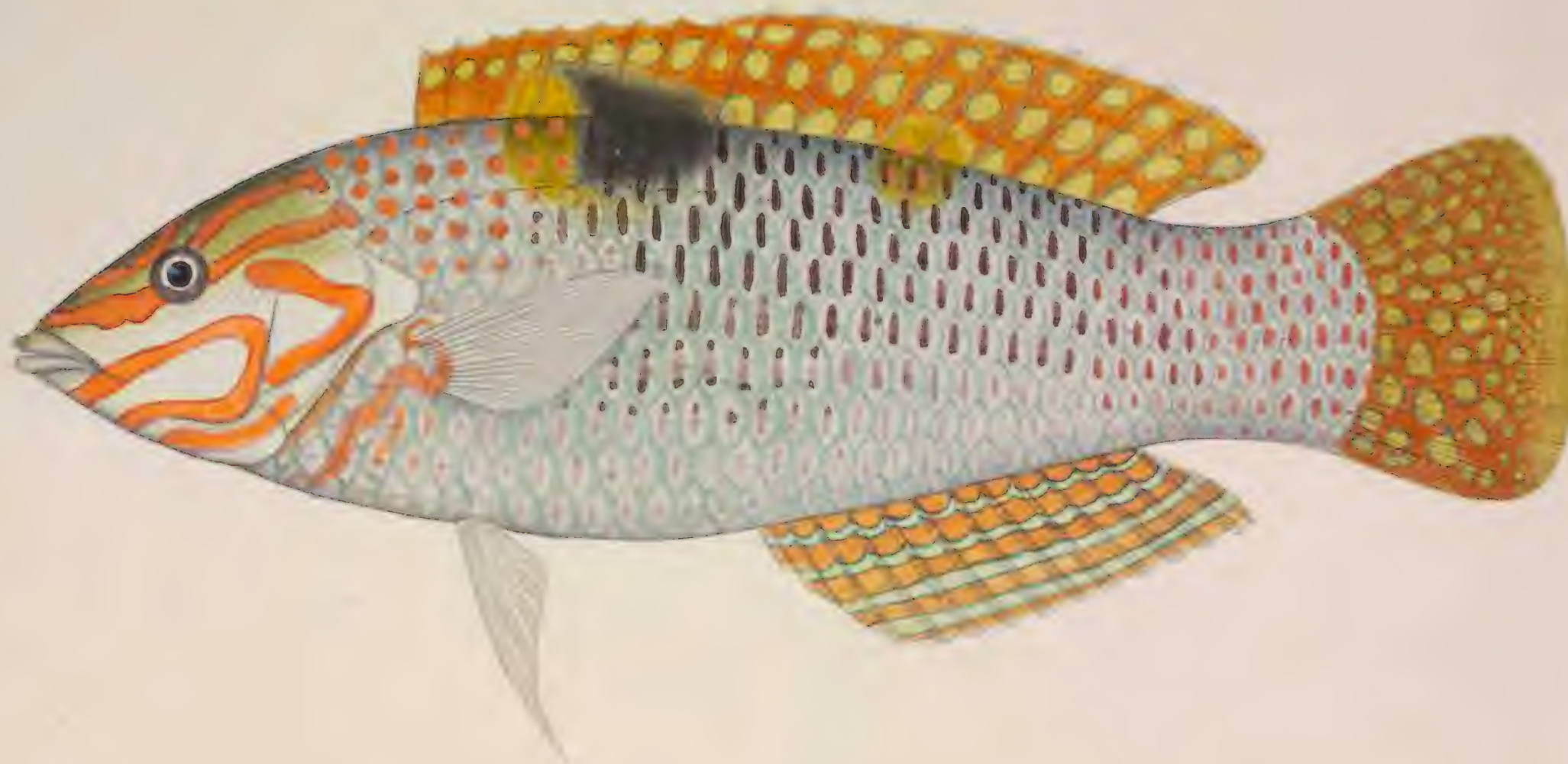
Length 9 inches.

Hab. Society Isls.

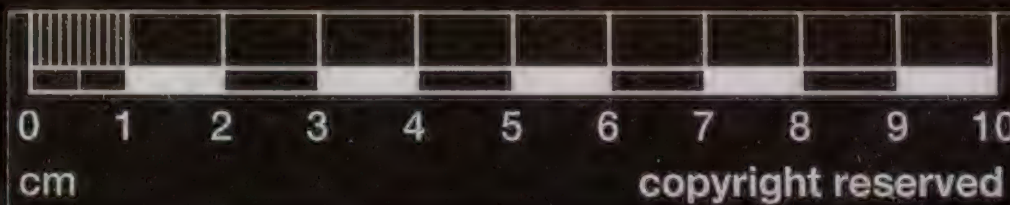
Native name Pavu masawa



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MUSEUM



Platyglossus hortulanus



Exocoetidae
Julis No 199

B. 6; D. 9-11; A. 3-11; V. 1-5; P. 12; C. 3, 1, 0, 0, 1, 3.

The head in this species forms just a quarter of the total length of the fish. The eye is circular in shape, and its posterior limb is just midway between the end of the snout and the hinder angle of the opercular flap. The height of the body is slightly more than a fourth of the entire. The lateral line consists of bispinose and bispinose tubes, and passes over 26 scales. The dorsal fin commences in advance of the hinder corner of the opercular flap and extends over a base just half the entire length of the fish. It is well developed and highest at the commencement of the soft portion. The anal fin is also well developed and is as long as the soft dorsal. The rather large ventrals are acutely pointed, and the caudal is truncately rounded when expanded.

Color and markings somewhat variable. The ground color is light green passing into light blue beneath. Some have the lower parts greenish yellow or bluish green. The whole body except the breast and abdomen is more or less reticulately clouded with brown or brown-red, which descends on the lower parts in irregular bands. Again we observe some with the cloud-like reticulation of a coppery-red and dusky, while the example which we have figured is scarcely reticulately the upper half of the body being nearly uniform brown and brown-red, and the scales more or less spotted and margined with blue. A light red and black spot

NATURAL
HISTORY
MUSEUM



marks the opercular flap. The head is ornamented red fasciae edged with light blue. (which arrangement of the band can be best understood by consulting the figure, which is an exact copy from the original fish) Sides light green. The dorsal and anal fins are of an amber red, the former maculated with light red blue margined irregular spots which are disposed in two longitudinal rows, the upper ones small, the lower ones oblong undulating. A conspicuous large black spot marks the middle of the fin, and sometimes a smaller one may be seen anteriorly. The anal fin is decorated with median longitudinal band which breaks up in spots posteriorly. A few spots on the basal portion all light red with light blue margins. Ventrals pale greenish with the anterior parts light red. Pectorals nearly colorless. Caudal copious red, profusely spotted with blue margined green spots.

Length $4\frac{1}{2}$ inches.

Habitat. Society and Kingman Islands.

Very rare.



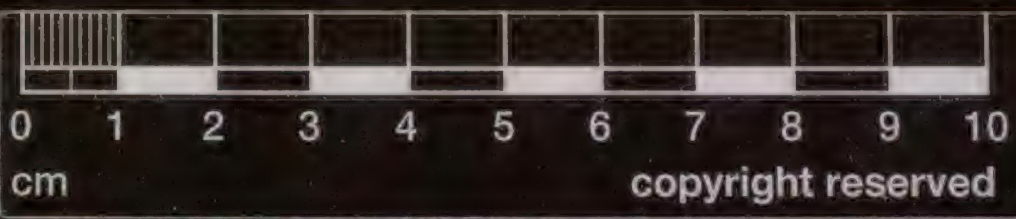
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312



Thalassoma kaneï (Nelson 1925 Fig. B.)

199



NATURAL HISTORY MUSEUM

Gulis No 425

D. 9-11; A. 3-11; V. 1-5; P 13; C. 2, 1, 4, 6, 1, 2

The head comprises a little more than a fourth of the whole fish, and the greatest depth bears about the same proportion to the length. The large eyes are circular their diameter entering five times in the length of side of head. The lateral line tubes are simple. Scales large.

The dorsal fin passes over a base equal to half the total length of the fish, and tapers in this way from the first soft ray. Caudal truncate. Anal shaped like the soft dorsal but a trifle shorter in its base. The ventrals are long, acutely pointed.

Color somewhat variable; generally grass green fading into bluish white beneath. Throat and under part of head pale lemon yellow. Each scale on the green ground of the body with a small vertical oblong pinky red, sometimes brick-red. A large black spot over the pectorals and a second nearly covers the upper half of the caudal trunk, which is in some examples blue-black. A pinky-red band, margined with blue, tapers downward and backward from the pectoral axilla.

NATURAL
HISTORY
MUSEUM

The head is ornamented with spots and bands of a pinky-red, brick-red or copper red color, edged with blue, whose arrangement can be best understood by consulting the figure. Irides yellowish silver, varied with reddish. Ventrals orange red, or amber red. Pectorals and ventrals nearly colorless. The dorsal fin is light yellow or nearly colorless ground, ornamented with three horizontal light red ribbons, edged with blue, the bands in some specimens more or less united by narrow vertical red bars. The anal fin is generally light yellow, sometimes the outer half faded red and the margin edged with steel blue. In some examples it is traversed by two or more light red ribbons edged with blue. Some specimens have pinky red and others again with light green band instead of light red ones.

Length 6-7 inches.

Hab. Kingmill and Society Isls.
At the former group it is called *Zealandi*
and at the latter location, *Pahoe*.

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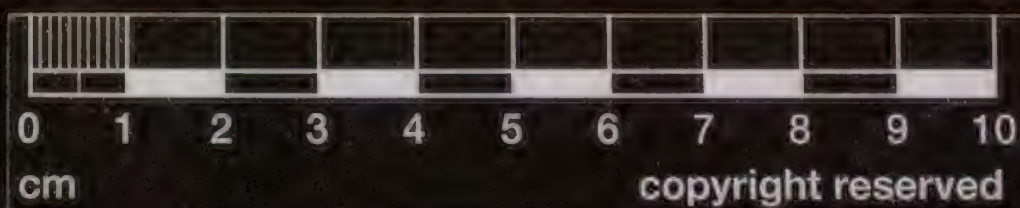
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425

313



Platygiarus vicinus
(Laf. 142 Fig. C.)



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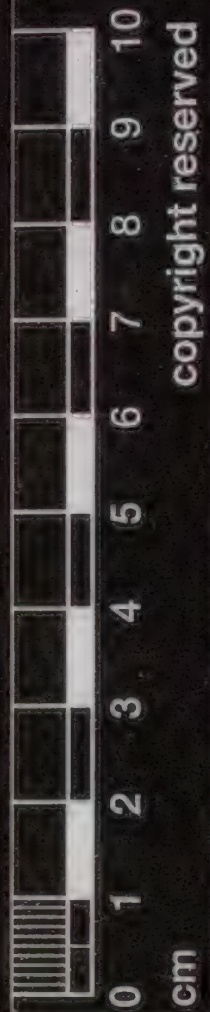
Platyglanis ^{not a species} ~~*biocellatus*, *gamb.*~~

D. 100; A. 35; P. 10; L. 10; C. 10; V. 10

The head in this species falls a trifle short of a fourth of the entire length. The eyes are circular, their diameter being about two-thirds of the length of the head. The greatest depth of the body equals about one-third the total length of the fishes. The structure of the fin rays but little different from those of *P. geoffroyi*, except the caudal being bearded, and the ventral less drawn out at their tips.

The body is deep brownish black, each scale marked with one oblong horizontal dark green spot, which ^{forms} a regular series of interrupted lines corresponding to the rows of scales. The head is emerald green, lined in the direction of its length with a closely set row of light green lines, which merge in the sides of the head. The breast and snout are light greenish white, and marked with a large black spot, a thin light and narrow stripe which runs in a line on the side of the head, the former from the snout over the eye, the latter from the occiput to the spot, and the

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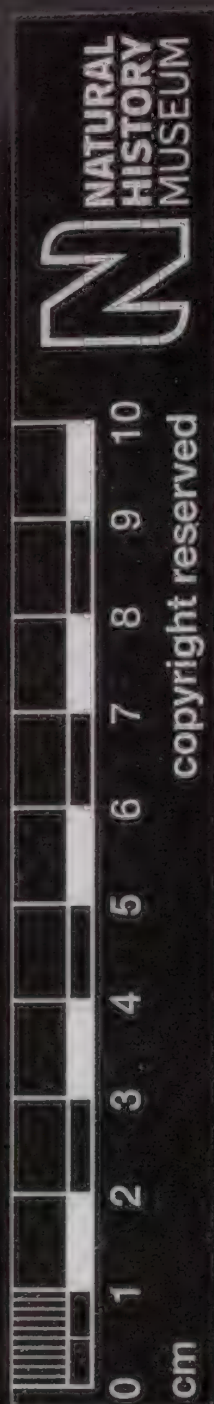


on longer end, and the other, which is
twice as large as the first, marks the
commencement of the articulation.
The spots are deep black, with a narrow
white border which tapers in edge with
backward. External feathers are yellow.
All the other feathers light blackish brown.
Irides light green.

Length, 4 inches.

Habitu, white, 12th.

A very rare species, character-
ized by its two subnations.

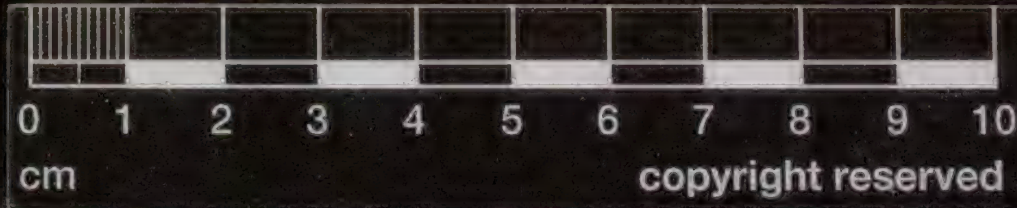


198

314



Platyglarus rotundus (Taf. 142 Fig. 1)



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Platyglanis ^{*marginalis*} ~~*maculatus*~~, *gen. n.*

D. 25, A. 24, S. 12, P. 12, V. 12, C. 12.

The greatest depth of the body is equal to about one-third of the total length, and the head comparatively little less than a fourth of the fish. The structure of the fins are quite similar to *P. maculatus*, except the ventrals, which are more pointed.

The coloration seen in the holotype from a single adult specimen is dark dusky green on the body, and marked between the horizontal rows of scales with interrupted sapphire and blue, and the scales being more green with the same, gives the fish a mottled appearance. There are a few small spots below the first two scales, a few below the first three scales, and above the occipital region marked with black marginal blue spots, and similar colored short stripes extend from the end of the snout. The head and gill covers with several dark irregular cross-banded green spots and irregular short black bands. Ventrals light blue.

NATURAL
HISTORY
MUSEUM

2



The vertical fins are dark reddish
brown, margined with pale and
green, and the intra-marginal light
blue submarginal with black. The
anterior third of the dorsal is marked
with several abbreviated horizontal
lines, and the remainder of the fin
is profusely ornamented with dark
marginal spots, which, like the lines
are emerald green, and brown or more
slate above. Similar small spots
mark the snout, but less numerous,
and the basal series are oblong and
oblique. The caudal is similarly spotted
like the body, and the base is mark-
ed with a vertical, curved, blue mesop-
ine emerald green bar, which is crenulate
on its posterior edge. Pectorals colored
with a large of brilliant emerald green
on their base. Ventrals pale with green
spots.

Length 5 inches.

Habitat: Society Isls.

Among many species.

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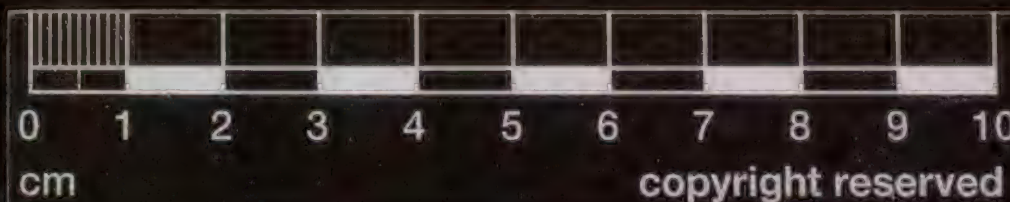


174

315



Platyglottos marginatus (Forsk.)



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Gulis ornatissimus, garrett.

Gulis ornatissimus, garrett, Proc. Cal. Acad.
Nat. Sci. Vol. 2, p. 63.

D. 9-12; A. 9-12; V. 1-5; P. 12; C. 2, 1, 6, 6, 1, 2.

The greatest depth of the body as compared to the total length is one to four. The head comprises a fourth of the fish. Eyes circular, their diameter entering five times in the length of the head. A little spine-like tooth projects laterally from the hinder end of the branches of the upper jaw. The dorsal fin commences in advance of the tip of the opercular flap and tapers either way from the first branched rays. The anal is more than half the length of the dorsal. Caudal convexly-rounded. The ventrals have their first articulating ray, prolonged into a filament.

Body greenish, becoming bluish-white beneath. Scales margined with rose-red. Immediately in advance of the pectoral base are two oblique rose-red streaks enclosing a blue one. Sometimes there are two streaks of blue arranged al-

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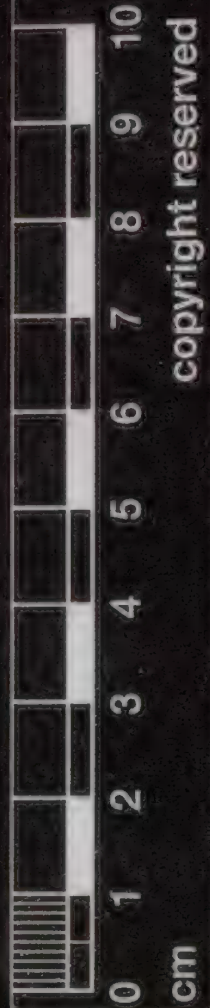
terminately with the red ones. The head is of a fine grass green or emerald green, ornamented by vermilion-red or rose-red stripes and reticulation which can be best understood by consulting the figure. Sides golden-yellow. Vertical fins carmine, margined with light blue. The upper half of the dorsal traversed by a yellowish-green stripe and the lower half is occupied by a single row of the same colored spots. A band along the middle of the anal, and numerous spots on the caudal yellowish-green. All the bands and spots on the fin and head are edged with blue. Pectorals and ventrals yellow, the latter edged in front with blue.

Length, 5 inches.

Habitat: Sandwich Is.

Remarks.—Since I published the short description of this species I have procured a second specimen which was five inches in length. It differed somewhat in color and markings, but can always be determined by the red margined scales, carmine vertical fins, and peculiar markings on the head.

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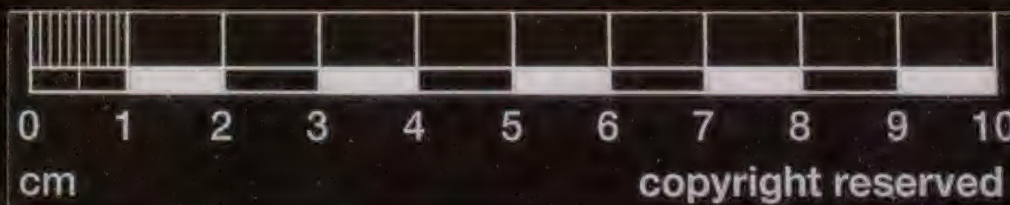


206

316



Platyglossus ornaticornis
(Taf. 141 Fig. C.)



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Gilbert's 186

D. 6; S. 2-12; A. 3-11; V. 1-5; P. 12; C. 2, 1, 6, 6, 1, 1.

This elegant species is rather slender; the greatest depth of the body is equal to one fourth of the total length, caudal excluded in the measurement. The head comprises about a fourth of the whole fish. The eyes are nearly circular, their greatest diameter enters nearly five times in the length of the head. The water tubes on the lateral line are simple and may be traced over about 50 scales.

The dorsal fin takes its origin a little in advance of the opercular angle and passes over a base little more than half the whole length of the fish. The soft portion is a trifle longer and deeper than the ^{springer} ~~soft~~ part.

The anal fin commences at a point corresponding to the first articulate dorsal ray, and is of equal depth and length to that part of the fin above.

The ventrals have the anterior articulate much prolonged into a subulate point, which when laid back reaches as far as the anal fin.

The caudal is truncate with the angles rounded off.

Color: the posterior portion of the body and caudal trunk are dark dusky green, the scales darker margined. The remainder of the body is a fine green becoming paler beneath, passing into pale pink or pinky flesh on the breast. Several oblique vertical sap green more or less broken stripes mark the lower posterior part of

NATURAL
HISTORY
MUSEUM

the body. The upper two-thirds of the body is decorated with longitudinal vermilion red stripes and rows of spots. The head is light fawn brown passing into pinkish flesh beneath. The upper part varied with red bands. The lower half is ornamented with three or four more or less arched, obliquely descending rich purple blue dark margined stripes which are continued to the lower line of the abdomen, the upper one extending posteriorly as far as the anal fin. Ventrals rich gamboge yellow varied with vermilion red. A spot of the latter color and a blue occupies the opercular angle. The dorsal and anal fins are pale reddish, dusky at their bases and varied with green stripes and spots which can be best ascertained by consulting the figure. The caudal is dark green, profusely spotted with red. The pectorals are straw yellow, the ventrals the same hue with an anterior reddish tinge.

Length 7 inches

Hab. Sandwich Isls.

cm

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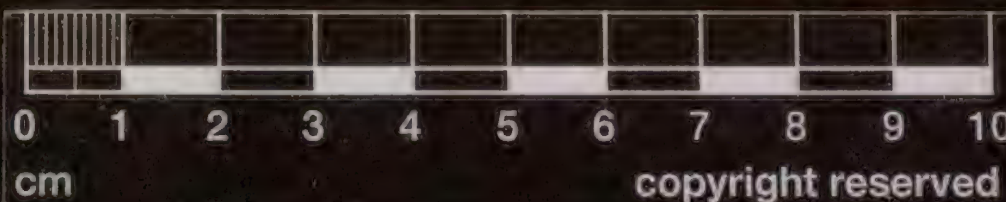
317



Coris venusta
Taf. 144. Fig. B.

Coris venusta

197



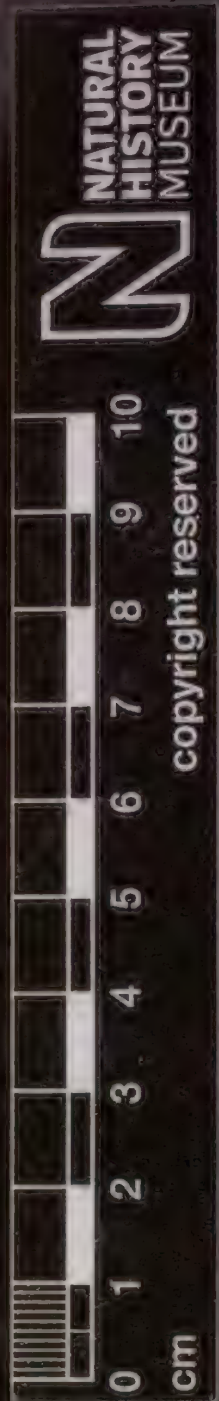
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Coris neusta, Garro

B. 6; D. 9-12; A. 3-11; V. 1-5; P. 12; C. 2, 1, 6, 6, 1, 1.

The general aspect of this species, except in color is closely allied to No 196. The greatest depth as compared to the entire length is as two to nine. The dorsal arch is more elevated than the ventral. The head is more pointed than No 196, and comprises about a fourth of the whole fish.

The ground color of the head and body is a rich orange yellow variously marked with carmine red stripes which are arranged mostly longitudinally on the anterior half of the fish and vertical posteriorly. The posterior bands are slightly curved, parallel and their concave margins posterior. The anterior stripes are irregular, more or less broken, and running into each other on the head. A blue spot marks the opercle flap. Sides greenish yellow. All the vertical fins are orange red, and the pectorals have light yellow rays. The spiny portion of the dorsal is traversed by two carmine red streaks, and the soft portion is maculated with small steel blue spots disposed in four or five horizontal series. Caudal spot like the soft dorsal, the upper and lower posterior corners white and a curved fine black line bounds the ground color of the fin. The anal fin is ornamented by horizontal dashes of violet and the base festooned with the same hue. Both anal and soft dorsal edged with black. Ventrals pale yellow with their anterior margins orange.



Length 6 inches

Hab. Sandwich Is.

Native name *Ahilelo*. (Rare)



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318
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Taeniopus ^{? *pulcherrimus*} No 452

D. 9-12; A. 5-12; V. 5; P. 12; C. 4, 1, 4, 4, 1, 4.

Color rich carmine, passing into green on the breast and belly, the former here profusely maculated with small roundish light green spots anteriorly, and rich blue ones posteriorly, where they are larger. Head carmine red, greenish on the cheek and two similar colored stripes radiate posteriorly from the orbit, the upper the longer. Irides yellow, varied with red and green. The dorsal fin is yellow, carmine red along its base, the anterior filament red, and the upper half of the soft portion and half of the spinous is traversed by a wide black band enclosing two blue ribbons. The lower half of the soft portion is dotted with blue. The basal half of the anal is rich light orange red dotted with blue and green and the lower half is deep black and ribboned like the soft dorsal. Ventrals banded yellow margined above and beneath with red. Ventrals brown black anteriorly, then blue which changes into pink posteriorly. Pectorals pale pink on their external surface, black

NATURAL
HISTORY
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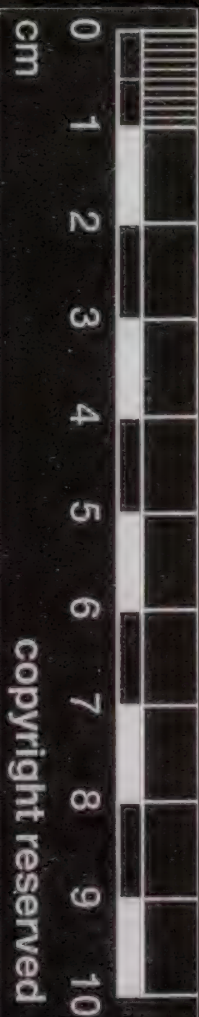
on their inner surface which is adorned
with a green luniform spot.

The greatest depth which is over
the abdomen is about a fourth of the total
length of the fish and a little more
than the length of head. The eyes are
small sub-circular, entering about seven
times in the length of head. The shape
and relative proportions of the fins can
be relied on in the drawing.

Length 10 inches.

Hab. — Sandwick Is.

Only a single example was
obtained at the island of Hawaii.

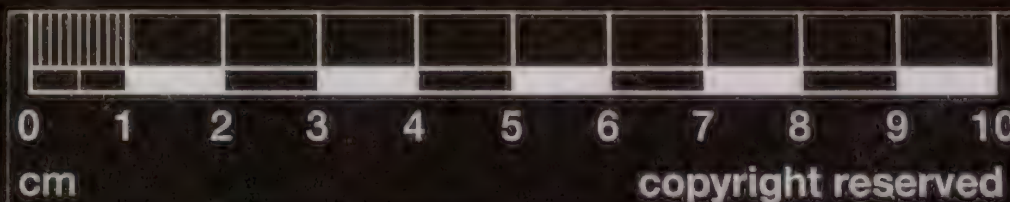


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? *Thalassoma kupa*

619



cm

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? *pulcherrima**Gammarulus gamardii*, L. & J.

Gammarulus gamardii, L. & J. *Gammarulus* *pulcherrimus*, L. & J.
Gammarulus *pulcherrimus*, L. & J.
pulcherrimus

Ln. 5-12; st. 1-12; head, 1.5; 6.4; 6.5; 1.4.

This magnificent species has the dorsal line more depressed than the ventral region, and the depth of the body at the origin of the anal fin equals the length of the head, which latter is a little more than one fourth of the total length.

The dorsal fin starts from a point above the origin of the lateral line, and passes over a base considerably more than half the total length of the fish. The anterior angle is prolonged into a long slender point, and the fin gradually increases in height posteriorly. The anal is the same shape and length of the soft part of the dorsal. The ventrals are very long and terminate in slender points.

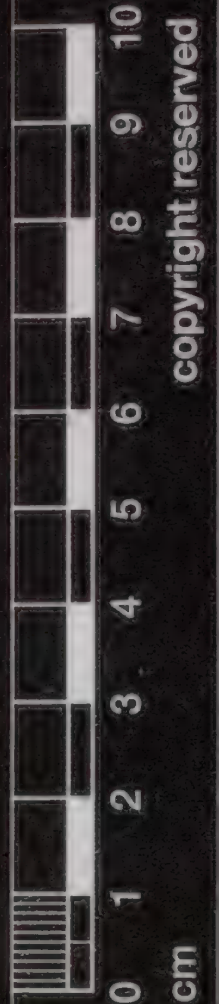
The color of this *Gammarulus* varies considerably in different individuals.

NATURAL
HISTORY
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The body and head are generally of
a dark reddish brown, sometimes
the former color more extensive
and the latter becoming paler by
degrees, some have deep red brown
bodies with reddish or violet heads. All
have their bodies maculated with small
darker blue spots, which are more
scattered anteriorly, and become more
and more crowded posteriorly, so that
on the end of the caudal trunk they
form a closely set mass. Ventrals
green or blue black, margins with
greenish yellow. Sometimes there is
a few green dots anteriorly, set green
oblique stripes on the breast, and
several longitudinal curved ones on
the head; one marks the upper line
from the snout to the dorsal fin,
two or three radiate from the eye,
a slightly arched one along the
middle of the head, commencing at
the angle of the mouth and some-
times unites with the one on the
breast; one marks the lower line
of the gill covers. Sometimes these
stripes are edged with violet, and
in others purple with red margins.

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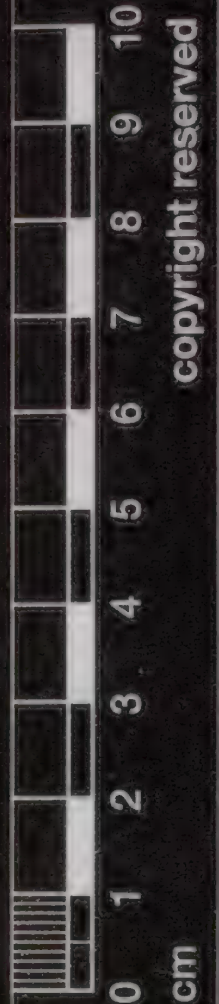
Irides bright yellow, varied with
vibrant blue red. The dorsal and anal
are generally the same tint as the
body along their basal surfaces,
and of a fine light red above.
Their basal portion is dotted with
rich blue, and generally there is
a large blue margined black spot
on the anterior end of the dorsal.
Both fins have black edging, which
are sometimes shaded off with blue.
Again the upper parts of both fins
are traversed by a broken sinuate
line. The caudal is always of
a rich orange yellow, the scales wh-
ich which extend between the rays
dotted rich blue, and, some have
the fin margins with orange red.
The other fins are light red anterior-
ly and orange posteriorly, the ventr-
als with a blue anterior edge.

Length, 10 inches.

Habitats - Sandwich Isl. Society, W.
Pinnacles Isl.

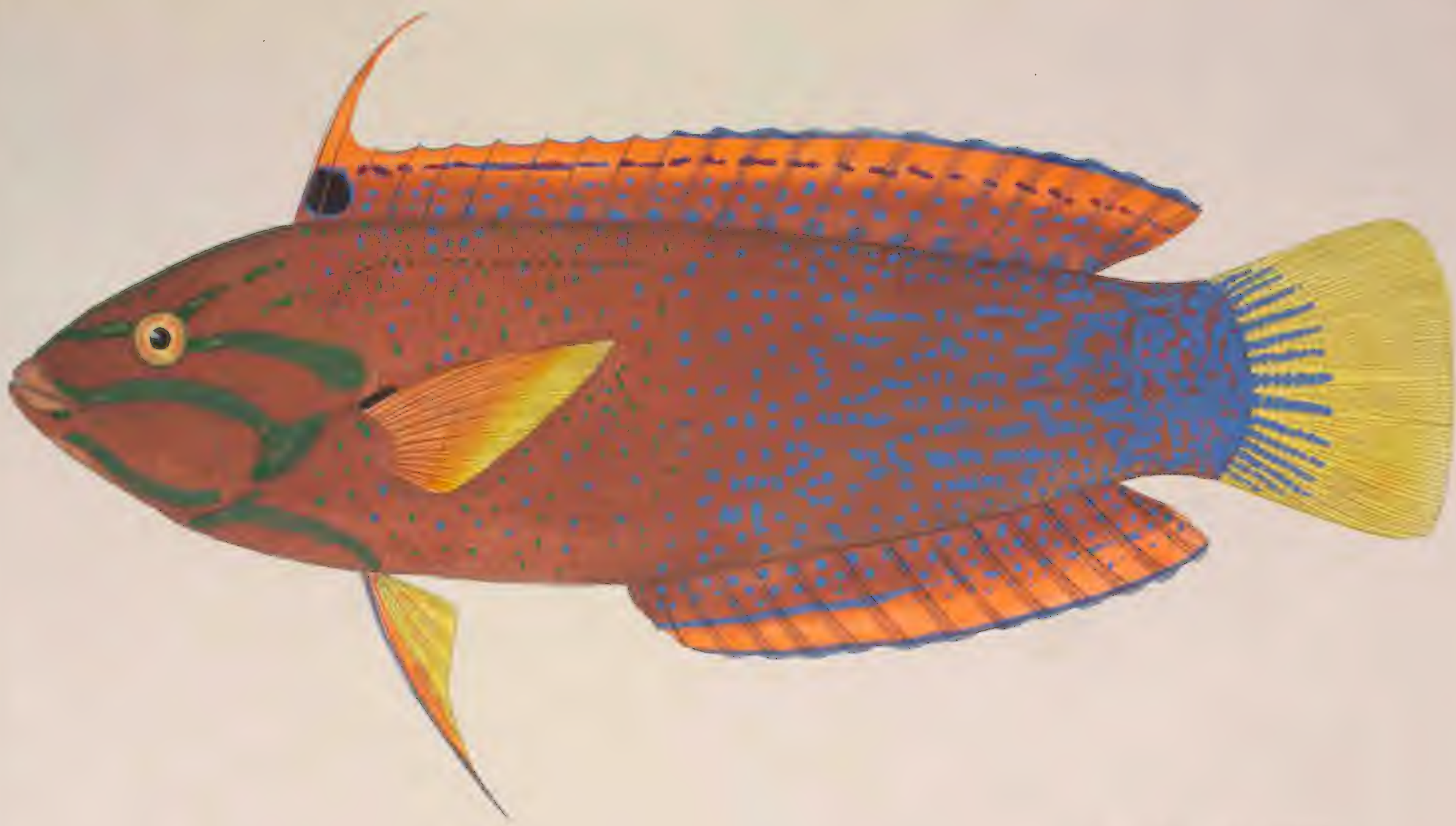
Garver says this the *Sparus cristatus*
West, and Rendell, part. 1, pl. 2, fig. 11 and part
2, 100. Quoy and Gaimard's figure is
very bad and incorrect in coloring.

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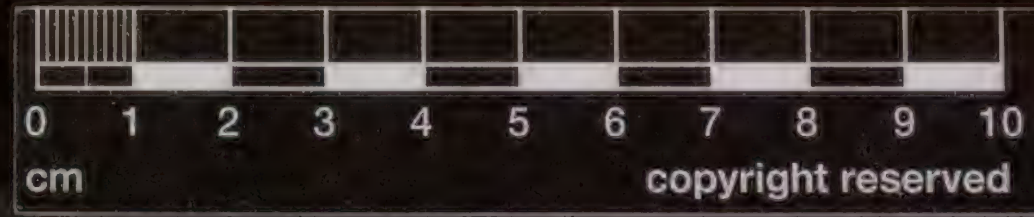


190

320



Thalassoma kupa



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MUSEUM

Lepomis, Jenkins

Desmijulis superbus, Jordan

D. 12; A. 12; V. 10; P. 10; C. 1, 1, 5, 5, 1, 3.

This superb species attains even a larger size than *D. flavescens* (Günther), now before me measured 10 inches in length, and is more robust than the latter species. The dorsal and anal are deeper and the two anterior rays of the former fin are more prolonged.

The greatest depth of the body equals one-third of the total length, caudal fin excluded, or about two-thirds including that fin. The head comprises a fourth of the fish. The eyes are circular, their diameter entering eight times in the length of the head, and three times in circumference of the orbit.

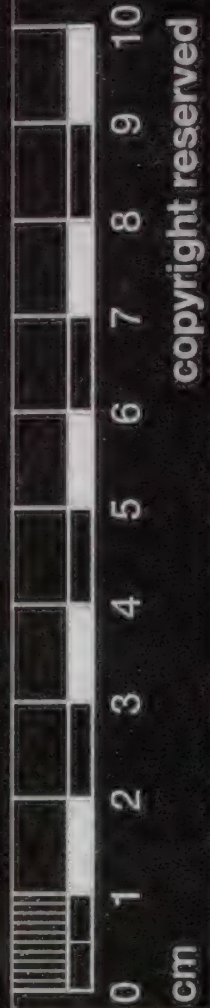
The anterior dorsal rays are long and flexible, rising about twice the height of the third ray, the second shorter than the first, which rather approximates the length of the whole base of the fin. Probably the prolongation of the two anterior rays only takes place in the mature specimens. From the third to the first or second branch

NATURAL
HISTORY
MUSEUM

at noon, the fin gradually increases in altitude, where the fin slightly tapers posteriorly. The anal fin is on a base equal to one third the entire length of the fish. The pectorals are a little longer than the ventrals, which latter are a little more than half the length of the head. Pectoral well developed and convexly rounded posteriorly.

Color somewhat variable: generally the body is light bluish green or green above the median line, where there is a tawny, brown or brownish shade, which latter color becomes on the lower parts in irregular stripes, reticulations and detached patches. Lower parts light greenish or bluish green. Upper half of the body same or less marked with scattering small rich light blue spots. Head light blue, becoming light green on the muzzle, and the opercle flap marked by a large deep blue spot. Sides silvery. The dorsal and anal fins are light green, changing into rich blue outwardly, and outlined with a brown yellow stripe and edged with a narrow iridescent ribbon and an ochre yellow submarginal line. The anal markings have dark borders. The

NATURAL
HISTORY
MUSEUM



caudal is rich light blue and not
isolated like the other vertical fins.
Pectorals and pectorals nearly equal.

Length 10 inches.

Habitat: - Sandwich Is.

The monaculus name of the
species at the above group is "Hib
scale."

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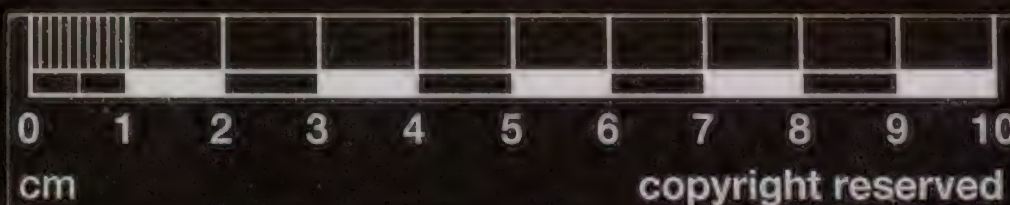
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*Coris leponis*

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*Coris cingulum**Macrinjulis patailui*, ~~new sp.~~

D. 11; L. 9-12; A. 13-15; P. 15; V. 12; S. 13.

The depth of the body is equal to the length of the head, or about a fourth of the total length of the fish. The dorsal outline is more depressed than the ventral. The eyes are circular, their diameter is barely about a little more than six times in the length of the head.

The dorsal takes its origin just above the base of the pectorals and extends over a base a triple length than half the entire length of the fish. The anal commences opposite to the ninth dorsal spine. The ventrals are long, pointed, and their tips reach the anal fin. caudal, convex posteriorly.

The head and anterior third of the body is light greenish or greenish straw color, and light bluish beneath the head and breast. Top of the snout green. A broad stripe of low broad scales the body at a point corresponding to the origin of the anal fin. Both head and body anterior to

NATURAL
HISTORY
MUSEUM

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The band is dotted with small copper
red spots, larger on the head, where
they have black contour. One spot
on the the opercle flap. The part
of the body posterior to the band
bluish green and the scales with
brown margins. Dorsal soft green.

The spring portion of the dorsal is
of the same color as the body be-
neath, and its soft part, together
with the anal and caudal are
dark green, all closely punctate
with irregular shaped ^{brassy} spots, and
the three latter are margined with
greenish yellow. The soft part of the
dorsal and anal have each an
intramarginal blue and brown st-
ripe. Ventrals colorless. The pectorals
are also nearly colorless, except the
anterior portion which is traversed by
two brown streaks enclosing one of a
copper red tint.

Length, 4 inches

Habitat: Socotra, Ind.

This species is somewhat vari-
able in color. One specimen has the
posterior part of the body green. Its
native name is "Panda-tai".

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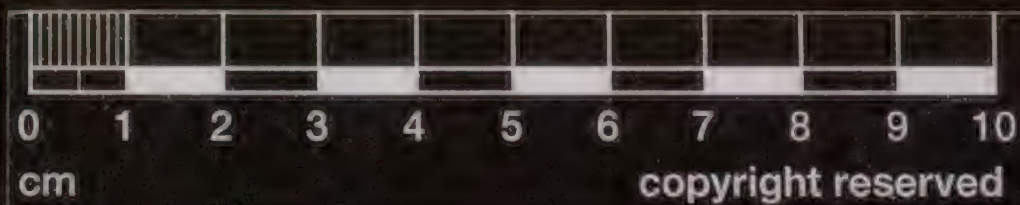


401
322



Coris ciripatum

Coris ciripatum
(page 11 fig. 1)



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Benojul's Garret
 Genus Leptopodus, Garret (Unpublished)

Body elongated, slender and rather strongly compressed. Scales very small. Head well developed, sub-circular, sub-circular and pointed. Teeth conical, disposed in a single crowded row, the front ones the longest, projecting forward and slightly curved. The preopercle has a large free membranous margin which is rounded off at the angle. Branchiostegal rays six; lateral line posteriorly bent downward as in Julis, and composed of simple tubercles. Dorsal and anal very long, of nearly equal depth throughout; spines slender, flexible, sub-basal and pectorals small, the former inserted beneath the latter. Ventrals sub-truncate.

Benojul's Leptopodus anulatus
 No 185

B. 6; D. 9-12; A. 3-12; P. 1-5; V. 12; C. 3, 1, 6, 1, 3.

The head comprises about two-sevenths of the entire length of the fish. The height of the body is much less than the length of the head, or about one-fifth of the total length, and the thick nose falls short of half the depth. The dorsal and ventral regions are nearly similarly arched. The eyes are sub-circular, their greatest diameter entering nine times in the length of the head, and nearer to the end of the snout than the hinder termination of the opercular flap.

The dorsal fin commences far in advance of the opercular flap and extends over a base more than half

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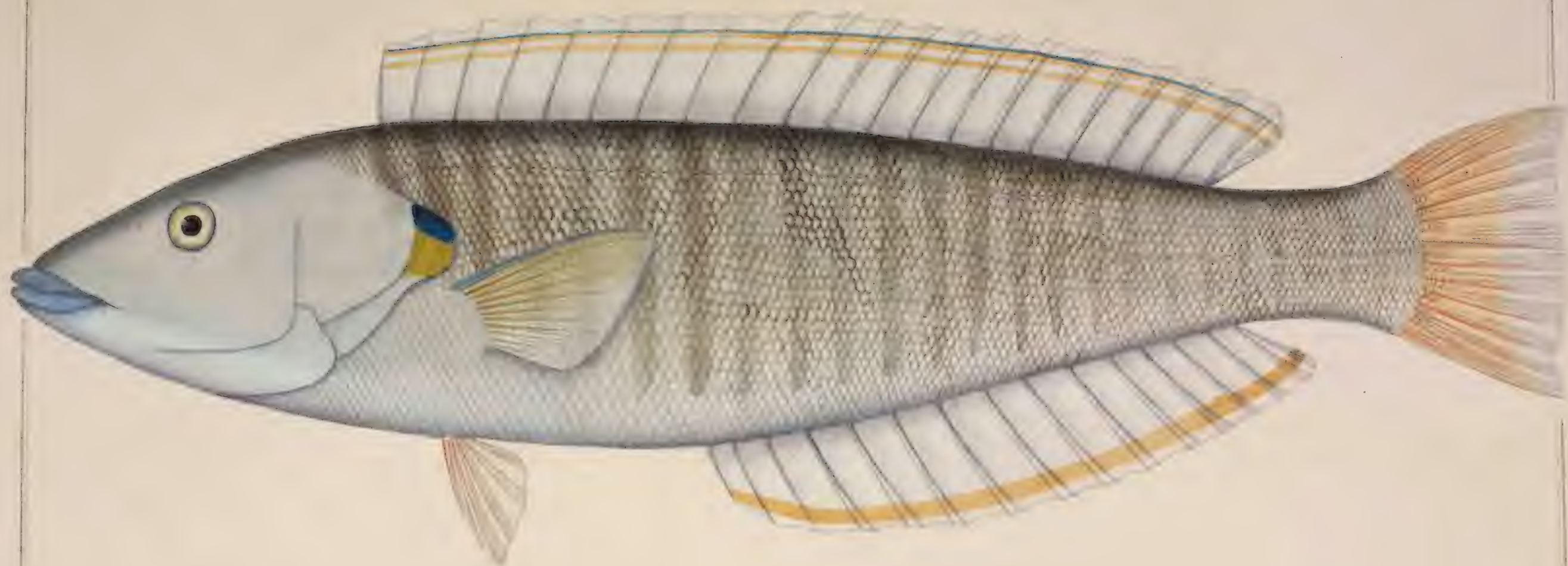
the length of the fish. Its soft part is the longest and the fin almost imperceptibly decreases in altitude in this way from the first articulation ray. The rays are those of the anal, uniserial but becoming more divided posteriorly. The anal, which terminates a little nearer to the caudal than the fin above, extends over a base about one-third the length of the fish, being about the same depth and shape as the opposite fin. The small ventrals when closely appressed to the belly reach half way to the anal fin. The pectorals are about half as long as the head. The caudal is undulate on its posterior margin.

Color greenish-gray passing into bluish white beneath. ²Planks with about 24 vertical narrow, diffuse brownish stripes which are about as wide as their interspaces, and do not reach the lower line of the body. The posterior half of the scales brown. Opercle flap with a yellow and blue spot. Lips light blue. Snout silvery tinged yellow. Pectorals colorless below, ~~with~~ above amber yellow edged with bluish lead color. The dorsal and anal subpellucid colorless except, the former with two amber yellow intramarginal lines, the upper one edged with deep blue, the latter fin with one similar stripe. Ventrals pale reddish yellow. Caudal reddish amber becoming colorless posteriorly.

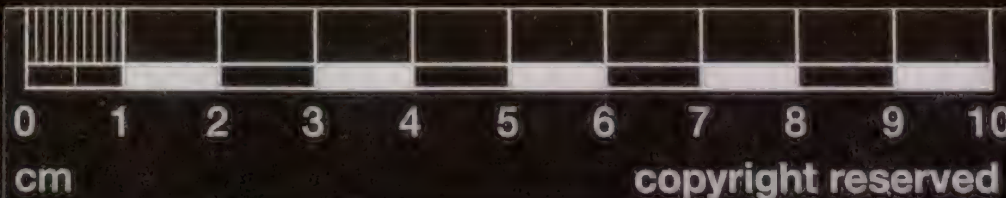
Length 11 inches.

Hab. - King's Mill Lake, Society, Iolo.

Rare.



Coris variegatus (♀?)
in right fig.



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Denopjulis No 186

324

B. 6; D. 7-12; A. 3-12; P. 1-5; R. 13; V. 2, 1, 6, 6, 1, 2.

The magnificent species of which I have seen but a single example is extremely rare.

The shape differs but little from No 185. The ventral are same as No 185.

The ground color of the body is rich light green and closely striped vertically with light violet. A rich violet band passes from the opercular flap and curves downward behind the base of the pectorals. The head is variegated with rich violet and brilliant bluish-green or rather emerald green. A yellow spot marks the opercular flap. Irises tarnished yellow.

The dorsal fin is emerald green along the base, which gradually passes into the violaceous purple above, where may be seen an intra marginal darker purple band edged with blue above; the upper margin of the fin is whitish and the basal half with oblique dashes of purple slate.

The anal fin is similarly colored as the dorsal but lacks the intra marginal purple band, and is marked by a middle green stripe. Ventrals pale dilute green. The pectorals are greenish slate above and pale watery green below. Ventrals bluish green becoming pale green on outer third; the upper and lower portions with a wide purple slate band.

Length 11 inches
Hab. Society Isls.

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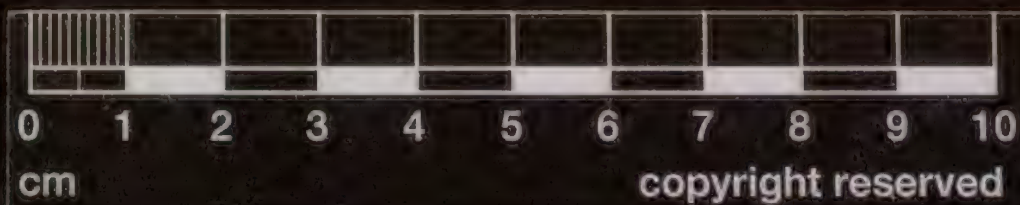
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Coris annulatus



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Jaenijulis greenovii, Bennett.

Julis greenovii, Bennett, Zool. Austral.
Vol. 4, p. 2.

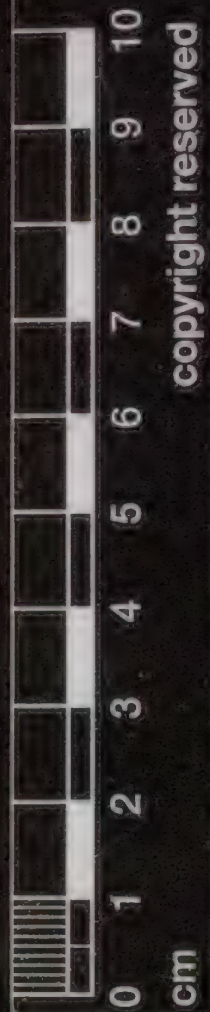
D. 7-12; A. 12-12; P. 10; V. 14; L. 14; H. 12.

Our description and colour drawing of this small species are from three specimens, which have been some time in spirits, and have changed their colour.

The snout comprises a fourth of the total length, and its upper and lower outlines are gently curved. The eyes are circular, and situated a little more than their own diameter from the end of the snout.

The dorsal fin arises a short distance in advance of the hinder corner of the opercle and extends over a base which occupies a little more than half the length of the fish. The anal commences at a point opposite to the ninth dorsal spine, or nearly midway between the end of the snout and base of the caudal fin. The ventrals are rather long, pointed and reach as far back as the anal. The pectorals are no long

NATURAL
HISTORY
MUSEUM



as the ventrals. The caudal, when expanded presents a convex border on margin.

Color (in spirit) pale brownish brown, a triangular spot on the snout, a short transverse band just behind the interocular space, a large one tapering down ward from the upper anterior edge of the dorsal fin as far as the pectorals, a large oblong spot which spreads over the back and the anterior half of the soft part of the dorsal, together with a saddle shaped one on the snout. trunk, silvery white, shaded off with deep brown. All the fins, except the pectoral and ventrals which are pale, are of the same tint as the body. The soft part of the dorsal and anal with a brown intra-marginal narrow stripe, and a similar one transverse the basal half of the caudal.

Length, 5 inches.

Habitat - Sandwich Isls.

Bennett's specimens were also procured at the Sandwich Isls, and were about the same size as those taken by myself.

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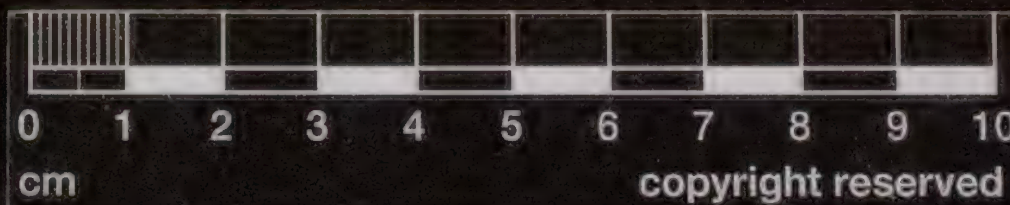


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Coris gunnisoni

188



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Trinajulis flavo-villatus, Bennett.

Julis flavo-villatus, L. J. Bennett, *zool.*

Proc., vol. 4, p. 35.

Julis cydoniae, Valenciennes, *Atlas Ichth.*, Hist.

Nat. des Poiss., vol. 12, p. 445.

Cydonia et *dentata*, *Proc.*

Bonn., vol. 1, p. 142, pl. 1, fig. 1.

Sub, 2.2-12; alt. 2-12; h. 1-3; l. 1-3; l. 1-3; l. 1-3.

An specimen of this beautiful fish now before me, measures 14 inches in total length, of which the head comprises nearly a fourth. The curvature of the dorsal region is more depressed than the ventral line, and the depth of the body, taken at the origin of the anal fin, equals a fourth of the total length. The eyes are circular, their diameter extending seven times in the length of the head and a trifle more than twice in advance of their orbit.

The dorsal fin commences immediately above the upper base of the pectorals, and passes over a distance more than half the total length of the fish. In the adult individuals

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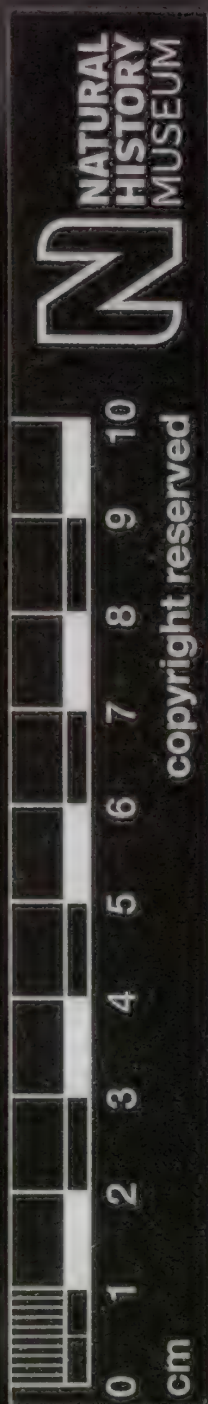


the first, second and some times the third rays are paracymbria above the others and are flexible. They being filled as usual with the membrane, that part of the fin exhibits a concave margin, having and in another example have the anterior rays the shortest, and the outline runs about parallel to the slight curvature of the back. The anal is about the same length as the soft part of the dorsal, or one third the length of the fish; it is gently curved on its anterior half. The ventrals are half as long as the dorsal, and when closely appressed to the body do not reach the anal by more than their own length. The pectorals are a little longer than the ventrals. The caudal is rather small, and when expanded exhibits a concave posterior margin.

The upper third of the body is blackish brown, passing into brownish red on the ^{head} ~~head~~ the latter color prevailing on the snout. A bluish white stripe, becoming light yellow on the body, extends from the end of the snout to the base of the caudal, where it di-



later in to a very large yellow spot.
 From the upper part of the spot starts
 another stripe which follows the con-
 suture of the back, bifurcating, bene-
 ath the anterior half of the soft portion
 of the dorsal, the upper branch ter-
 minating on the transverse line. The
 lower one outlines the upper limb
 of the orbit and extending to the
 end of the snout. At this point is
 the line of profile from the snout
 to the dorsal fin. All the stripes,
 including the large saddle spot,
 are more or less shaded along their
 margins with suffused red. Anterior
 and below the lower stripe is a
 broad diffuse pinky red zone, which
 is much more conspicuous in the
 young, and fades into pinky flesh
 color beneath. A small light blue
 spot marks the opercle flap. Sides
 brownish red, changing into golden
 towards the blue black caudal. The
 dorsal fin is deep blackish brown,
 paler ventrally, the upper margin
 white, its anterior end marked by
 a large diffuse blue black spot, and
 a series of large chairlike yellow



spot extends the whole length of the fin. Head bluish black, tinged with yellow along its base, margins with white and the former color shades off with light blue. The basal portion of the caudal is covered with the large yellow spot as before mentioned, and marked with a broad, lunate blue black zone, edged posteriorly with light blue, beyond which the fin is white. The ventral and pectorals are colorless, the former tinged anteriorly with pink.

Length 15 inches.

Habitat: Sandwich Islands.

This species is not by any means rare at the above location, where it is called "Hila", and may often be seen exposed for sale at the fish stalls at Honolulu.

It was first described under the name of *Gobius flavo-rufatus*, by C. D. Bennett, in the fourth volume of the "Zoological Journal", 1836. Two specimens were very young, the remaining three were

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in half inches in length. He also mentions that they were collected at the San Diego Is. by John Gould, Esq., who accompanied Lord Byron's Expedition to the Pacific Ocean.

He describes it thus: "The ground color is deep olivaceous inclining to black, becoming rather paler towards the under parts; it is marked longitudinally on each side with four golden stripes, the first of which begins above the eye, and is continued along the back, almost to the base of the dorsal fin, as far as the commencement of the caudal one; the second begins on the nose, crosses the upper part of the orbit, and is gradually lost when on a level with the middle of the first part of the dorsal fin; the third passes from the tip of the nose across the lower part of the orbit, and terminates at the base of the caudal fin; and the fourth, commencing at the angle of the mouth, has the same termination as the first and third; there is also a slight appearance of a fifth passing along the abdominal margin. A short yellow line passes

NATURAL
HISTORY
MUSEUM



also from the nose along the middle of the head to the commencement of the dorsal fin."

"The rays of the dorsal fin are of equal length throughout its whole extent; the main body is dark fuscous with a slender yellow margin, and marked along its middle by an interrupted villar; the caudal and anal fins are dark fuscous, margined with yellow; the ventral and pectorals are pale fuscous."

The ray formula reads D. 2-13; 1-13; A. 1-14; C. 14. He counts the last ray of the dorsal and anal, which are double, as two.

The young specimens which I have examined agree well with Mr. Bennett's description of the peculiar markings, though somewhat different in colors. His specimens having probably been changed by immersion in spirits. The green line, which he mentions as gradually disappearing when on a level with the middle of the soft part of the dorsal fin, unites with the one above as the fish attains a larger size, and thus forms the same fork.

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The lower horizontal stripes also gradually disappears as the fish advances in growth.

In the zoology of the voyage of the "Beníte", pl. 6, fig. 1, is a tolerably correct colored delineation of our fish, though drawn from an immature specimen. The anterior dorsal rays are not prolonged, and the markings are the same as would characterize an example 6 or 8 inches in length. D. 10; ray formula read: D. 12; A. 12; P. 1-5; P. 13; C. 3-1-6-2-1-3.

Bennett's name was published anterior to that of Valenciennes, and must, according to the laws of priority, be adopted.

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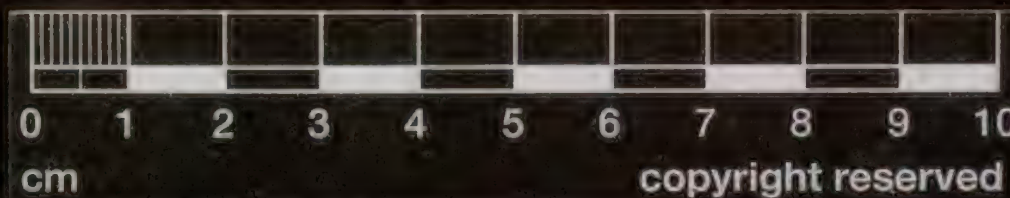
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Coris flavovittata
fig. 1



Genus Cheilio, Lat.

Form elongate, slender, compressed. Head long, pointed, naked, except a few oblong scales on the posterior region of the eye, on the supra-tympanic region, and an oblique row of rounded ones on the hinder gill covers. Mouth deeply cleft, slightly oblique. Lips loose and thick. Lower jaw the longer. Teeth generally in a single range, stout, conical, with two anterior projecting canines. Scales small. The lateral line composed of branchiostegial tubes, and curving downwards over the pectoral fins. Branchiostegial rays six. The dorsal and anal fins very long and composed of slender rays. Ventrals small, inserted beneath or a little posterior to the pectorals.

These fishes may be readily distinguished by their slender body, long pointed head, long dorsal and anal.

NATURAL
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Cheilio hemichrysos, Val.

Cheilio hemichrysos, Val., Hist. Nat. des
Pois., Vol. 13, p. 351

Cheilio auratus, Quoy, Voy. Uranie, p. 274,
Pl. 54, fig. 2.

Cheilio hemichrysos, Bleeker, Atlas
Japan Ex. Vol. 2, p. 232

B. 4; D. 7-13; A. 3-12; V. 1-5; P. 12; C. 2, 1, 3, 5, 1, 4.

The general aspect of this species is slender, with the upper and lower profiles nearly similar. The depth, taken at the origin of the anal fin, and compared with the total length of the fish is as two to seven-teen, and the thickness taken at the same point equals two-thirds of the above mentioned depth. The head constitutes a third of the fish caudal excluded. The upper profile above the nasal openings is slightly prominent. The eyes are horizontally oval, rather large, their length being one ninth that of the head. The lateral line passes over forty-eight scales.

The dorsal fin takes its origin

NATURAL
HISTORY
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a little posterior to the snout oper-
cle corner, and passes over a base
nearly half the length of the fish.
Its upper margin is gently arched
and deepest at the first branched
ray. The soft portion is composed of
biped rays and is longer than the
anterior or spiny part. The anal
commences opposite the first artic-
ulate ray in the dorsal, and ter-
minates on a plain with that fin.
It is the deepest anteriorly, and slight-
ly exceeds that of the fin above. The
ventrals are inserted immediately
behind the base of the pectorals,
which latter fins are one-third the
length of the head. The caudal
is somewhat rounded.

The scales on the upper half
of the body have their anterior portion
dark steel blue and olivaceous
posteriorly. The lower scales are also
bicolored but paler than above. An
obscure pale stripe extends from the
snout, over the eye and traverses the
upper third of the body and termi-
nates at the tail. A row of blackish
dots along the median line. The upper

NATURAL
HISTORY
MUSEUM



half of the head is olivaceous, the lower portion bluish steel, reticulate with buff yellow and orange. Ventrals not with olive and reddish. The fins have thin transparent colorless membranes, the dorsal and anal with a few irregular obsolete linear yellow spots and amber colored rays. The caudal rays are greenish.

Length, 15 inches.

Habitat Society Isls, Sandwich Is., Japan.

I have only remarked this species at the Society Islands, where it is rare. Duoy and Gaimard obtained it at the Sandwich Is. I mention Japan as the habitat of this fish on the authority of Bourcet, which is doubtful as he had only an imperfect drawing of a Japanese fish which he supposed to be this species. Valenciennes mentions Tahiti as the location, where it is called "Pac-pe".

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Cheilio inermis



Cheilodactylus hemichryseus, Lat.

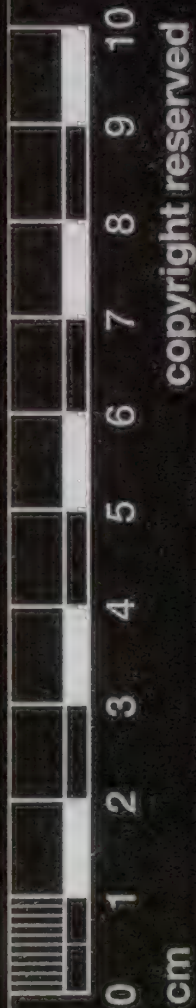
Var: chrysobolus, Garrett.

This beautiful fish agrees in every particular except color with C. hemichryseus. It is of a fine golden yellow, paler beneath, and the scales have lighter margins. There may be observed faint traces of the median row of dark spots. The fins have colorless membranes and yellow rays. A red line marks the base of the Pectorals. Snout golden yellow, with numerous red clouds.

Length 14 inches.

Habitat: Society Isles.

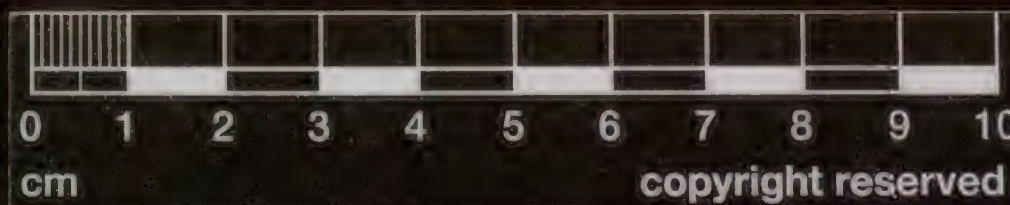
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328



Cheilio inermis



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Cheilodactylus unimaculatus, Garrett

B. 6; D. 9-12; A. 3-12; V. 1-8; P. 11; C. 3, 1, 6, 6, 1, 2.

The body tapers posteriorly from the base of the head, where its depth equals ^{nearly} one-sixth of the total length of the fish. The head comprised one-third of the entire length, caudal excluded. The hinder tip of the maxillary reaches the pre-nasal opening. The upper profile of the head is nearly straight. The eye is obliquely oval, inserted quite near the upper line of the head; its length being, as compared to that of the head, two to twenty one. There are ~~about~~ twenty rows of scales between the dorsal fin and the vent, and forty seven in the course of the lateral line. ~~Fishes singular~~

A line dropped from the origin of the dorsal fin touches the lower corner of opercular flap, passes behind the base of the pectoral and ventrals. It extends over a base half the length of the fish, and tapers almost imperceptibly either way from the first branched rays, which latter are divided two or three times. The anal is a little longer than the articulated portion of the dorsal and approaches rather nearer to the caudal than that fin. The small ventrals are placed immediately beneath the pectorals. Caudal rounded.

Color, of the dead fish greenish lead color, above and bluish beneath. Scales margined with straw yellow and an intransigent ochre yellow linear spot. Just posterior to the tip of the Pectoral may be seen a diffuse large black ~~spot~~.

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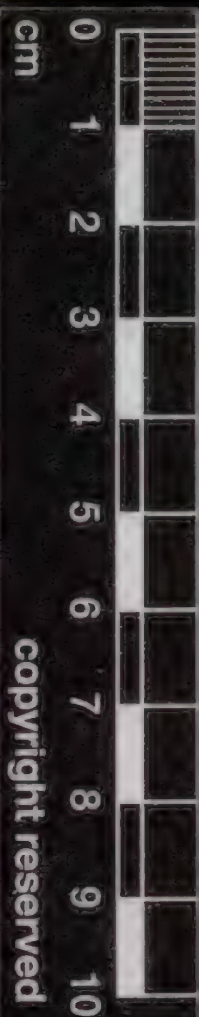
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and three or four small carmine spots.
Head olive green, paler beneath. A small
blue spot on opercular flap and a blue line
runs posteriorly from the angle of the mouth.
Sides variegated with red and yellow. The dorsal
fin is pale steel over which is thrown a
beautiful net-work of pale number. Anal
steel blue, with clear, oblique series of
lineate number spots. Ventrals faded red.
The other fins colorless.

Length. 16 to 18 inches.

Habitat: Society Isls. Sandwich Isls.

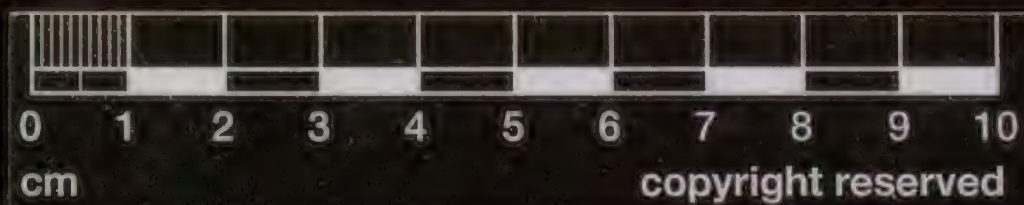
Remarks: At the former group the
vernacular name is "Pa-o-fe". The specimen
obtained at the latter group differed somewhat
^{in coloration} from the Tahiti specimens, as seen in ~~the colored~~
~~drawing~~. In the colored drawings the scales
were too large.



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Cheilio

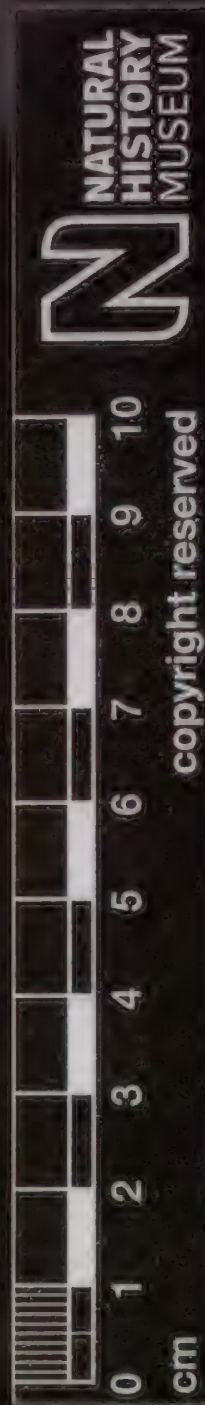


Lutroides sp. (783) 330

Color light brown, with longitudinal rows of oblong deeper brown dots on row on each series of scales. Irides ^{yellow} silvery. Interocular band silvery-white, margined with deep brown. Radiating dotted brown lines beneath the eyes. Fins the same color as the body becoming darker outwardly. The upper portion of the spring dorsal whitish, and the hinder third of the caudal colorless.

As I unfortunately packed away the specimen before drawing up a detailed description, I can only send the unfinished drawing and colors.

The specimen is the only example I ever saw, and was obtained at Basatan Island, in January, 1873.



#1



Novacula

330 4



Uroacanthus Vanikorensis, D. S. G.

Uroacanthus Vanikorensis, D. S. G. Reg. Abolish.
Vol. 1, p. 204, Pl. 1, fig. 1.

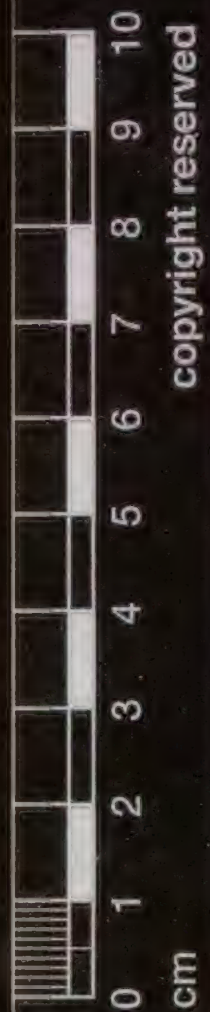
D. 1; L. 9-12; A. 5-12; V. 1-5; P. 1; B. 1, 4, 6, 4, 1, 1.

The greatest depth equals one-third the total length, caudal excluded. The body gradually ^{deepens} posteriorly from the base of the head, which latter equals one-third of the fish, caudal excluded. The caudal fin is nearly half as deep as the body. The eye is circular, its diameter entering nearly seven times in the length of the head, which latter is precipitately convex above.

The dorsal fin commences a little posterior to the eye, about equally divided in its two portions, the spiny part low, gradually rising to the first soft ray, and the soft part very deep. The long anal is deeper than the fin above and commences opposite to the eighth spine of the dorsal. The small ventrals nearly or quite overlap the vent. The broad caudal is rounded off posteriorly.

Color deep greenish brown. Each scale on the body with a large oblong vertical greenish gray spot. Abdomen red with each scale edged with white. A black curved axilla band. Head and breast pale olivaceous, paler on the cheeks and opercular pieces where it is inclined to buff yellow. Four narrow greenish ^{bands} edged with white radiate from the posterior half of the eyes, two upward and backward, and two which are much the longer pass downward and backward over the opercular

NATURAL
HISTORY
MUSEUM



apparatus. Sides ruby-red. Pectorals near
colorless, the ventral purple brown and the
caudal flesh color on basal third the
outer part the same hue as the body and
varied with vertical narrow broken greenish
bands. The dorsal and anal are pale gray-
ish yellow or bluish gray closely marked
with olivaceous brown small spots, and the
former with two anterior white margined
blue black spots with a dash of yellow
beneath.

The colors are somewhat variable
in this species, examples obtained at the
Kingsmill were brownish and the spots
on the scales becoming yellow. Head and snout
pale straw yellow and the cheeks tinged
pale blue. The ribbon greenish white
with dark margins. Abdomen pale red
with the scales margined with vermilion red
and white. Dorsal and anal yellowish
white spotted with brown.

Length 12 inches

Habitat. Society and Kingsmill Isles

cm

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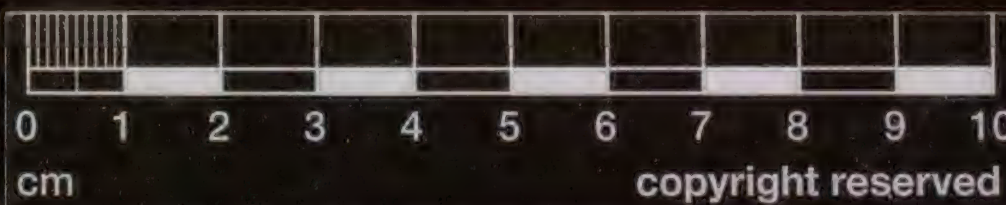
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331



Thalassoma tangiroseum



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Xirichthys? No 219

332

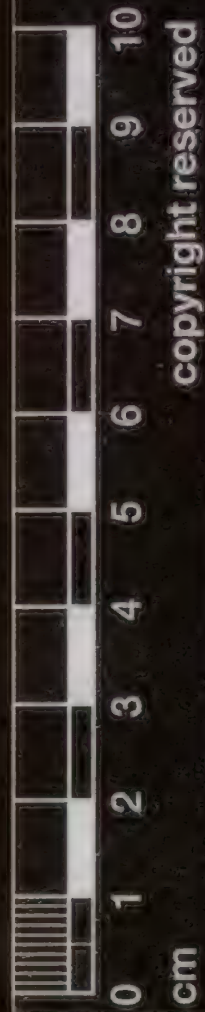
D. 2-7-12; A. 2-11; P. 1-5; V. 11; C. 4, 6, 4, 3.

A specimen of this singular but beautiful Labroid now before me was captured at the Sandwich Isles, and measured 4 inches in length.

The general shape is oblong, strongly compressed, the greatest depth of the body equal to one-third the total length. The head is vertically arching, rather prominent on the upper profile, and comprises nearly a fourth of the fish. The eye is sub-circular, its diameter one-sixth the length of the head. Teeth stout, conical, disposed in a single range in either jaw and the two anterior ones longer, curved and projecting. The large scales are smooth, disposed in 12 horizontal rows, 25 or 26 on the median line and 7 rows on the trunk of the tail. The lateral line consists of simple tubes which pass over 21 scales to the interruption beneath the hinder part of the caudal and 5 or 6 scales where it commences again on the median line.

The first dorsal ~~commences~~ ^{arises} a little posterior to the eye and consists of two long, flexible rays, the first the tallest, both united by narrow membrane. The posterior fin arises a little in advance of the base of the pectorals and passes over a base more than half the length of the fish. The anal fin is shaped like the fin above, and extends over a base a little more than

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one third the length of the fish. The ventals are acuminate pointed and the small caudal is convex posteriorly.

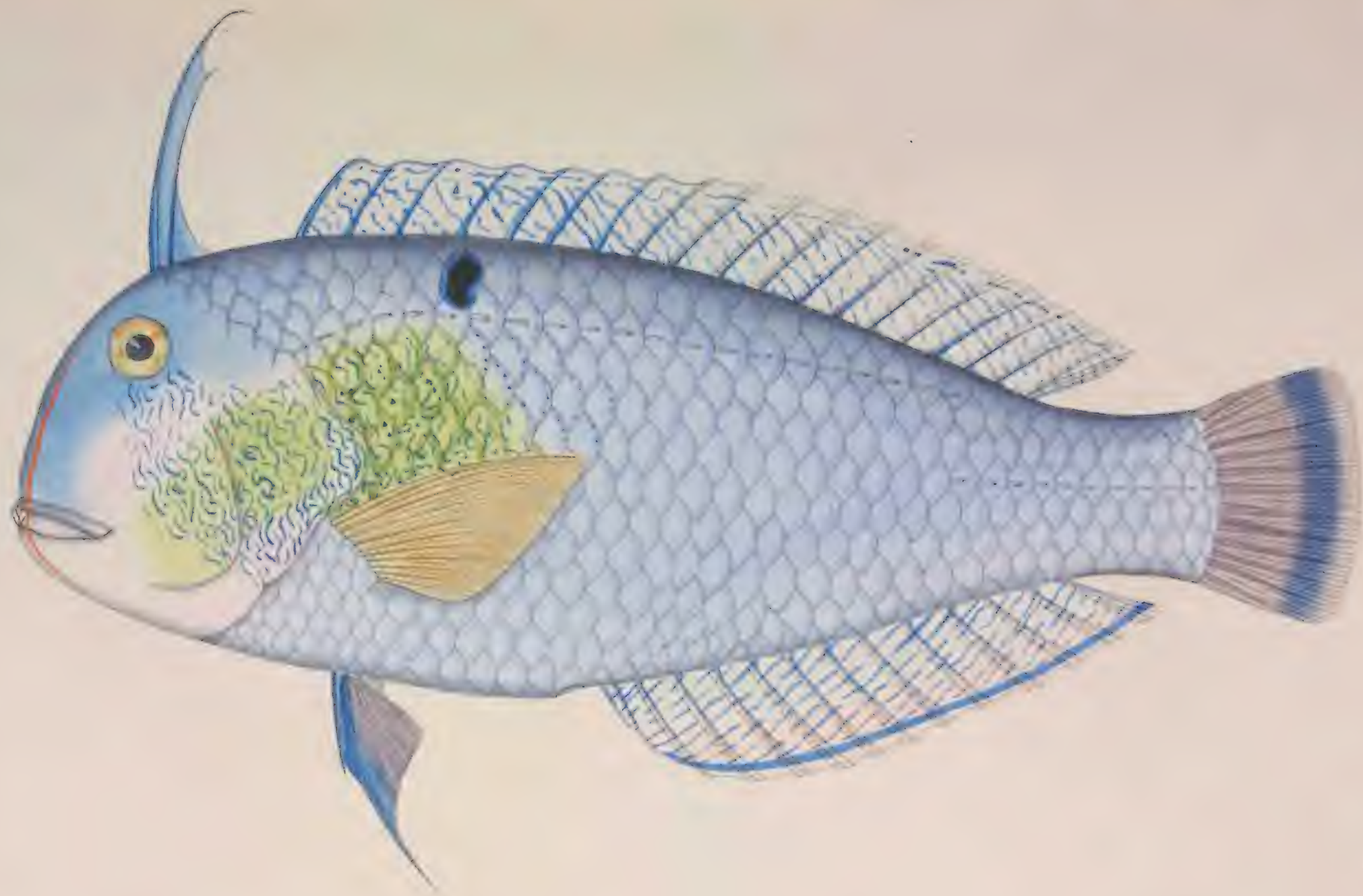
It varies much in color and markings. The example before me is of a bluish lilac color, with a large sap green patch over the pectorals, and a deep black, blue margined spot just beneath the fourth dorsal spine. The cheeks and opercular space flesh color, the latter tinged sap green. The upper part of head is light blue. The hinder middle portion of the head and the sap green humeral region marked with light blue reticular lines. The anterior portion of the head with an intramarginal vermilion red line. Ventrals greenish yellow tinged copper-red. The anterior dorsal is light blue. The posterior dorsal and anal sky-blue, the latter light red above. Lower half white is traversed by a light blue ribbon, and both fins oblique by pencilled with short blue lines. Caudal light purple with a light blue vertical bar. Pectorals amber yellow. Ventrals light purple posteriorly and light blue anteriorly.

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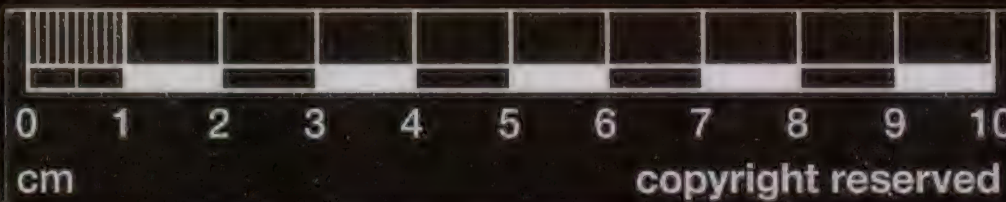
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Novacula pavo



Gulis lunaris, Lin.

333

Lobus oblongus; cauda bifurcata, Gray, Mus.

10.2, p. 26, pl. 6, fig. 2.

Lobus pinnæ caudæ medio truncata; Lin. Syst.

Nat. Ed. 10, gen.

142, no. 6.

Lobus lunaris, Goulin (Lin.) Syst. Nat., p. 1282.

Lobus lutescens, Schenker, M.S.

Lobus zeylonicus, Penn., Ind. Zool., p. 56, pl. 16.

Gulis Hardswickii, Gray, Illust. Ind. Zool., pl. 2.

Gulis lunaris, Cuv. et Val., Hist. Nat. Des

Pois., vol. 13, p. 409.

Gulis lutescens, Lay et Bennett, Zool. Voy. Blois-

-son, p. 65, pl. 17, fig. 2.

= = Brevoort, Perry's Exp. Ex., vol. 2.

p. 271, pl. 2, fig. 2-4.

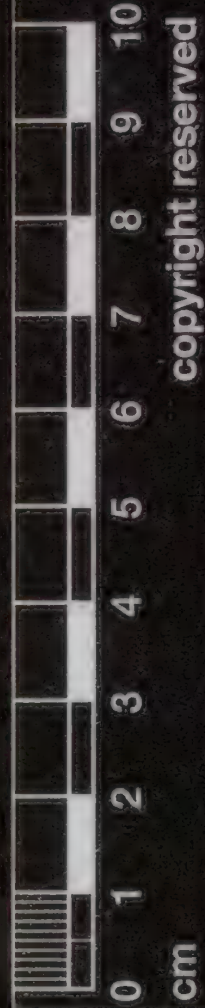
Gulis lunaris, Richardson, Report. Brit. Mus.,

1846, p. 260.

D. 6; A. 13; P. 10; V. 5; B. 3, 1, 6, 6, 1, 3.

The greatest depth of the body which is at the origin of the dorsal fin, equals the length of the head or a trifle less than a fourth of the total length of the fish. The eyes are circular in shape.

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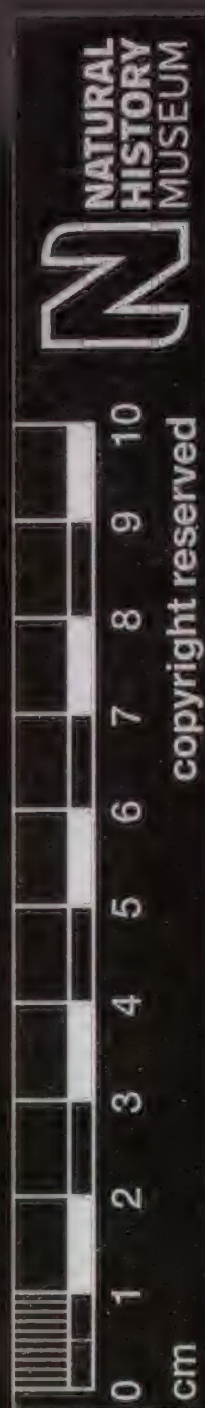
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their diameter equal to one-sixth the length of the head.

The dorsal fin takes its origin immediately above the hinder termination of the opercle flap, and the anal passes over a base half the length of the former fin. The ventrals have their first soft ray prolonged into an acute point. The terminal margin of the pectorals is slightly concave. Ventrals truncate along the middle of its posterior margin, and its forks long.

Color of the body, sage-green, closely marked with vertical, more or less broken, rose-red narrow streaks which gradually assume maculations posteriorly. Nape, shoulder, breast and abdomen light brownish-red. A longitudinal band on the breast and a large lobed patch behind the opercle, greenish-yellow, margined with blue. Head reddish-buff, and longitudinally fasciated with brilliant light green, edged with blue. The disposition of the bands may be best understood by consulting the figures. Sides grass-green. The basal halves of the dorsal, and anal, rose-red edged with blue, and their outer portions greenish-yellow. The anterior portions of the ventrals are light greenish. Pectorals of a fine gamboge yellow, which passes into deep blue-black

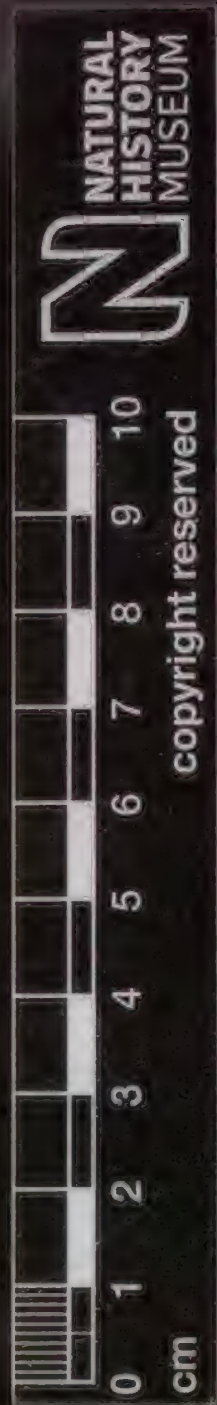


posteriorly. Ventral greenish-yellow, broadly
marginated above and beneath with rose-
-red, edged with blue.

Length, 8 to 10 inches.

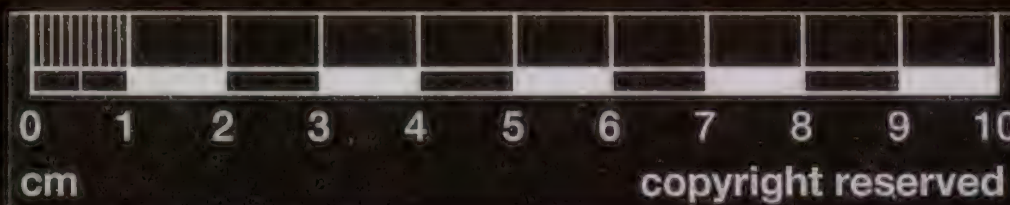
Habitat.—Society Isls. East Indies.

Remarks.—This beautiful Gulia be-
longe to a small group of species, charac-
terized by the close vertical streaks on
the body. Solender first noticed this species
at Tahiti, of which a drawing was made by
an artist employed by Sir. Joseph Banks.
Solender's description though brief is very
correct. During the voyage of the "Plover"
a Gulia was obtained at one of the Loo Choo
islands, of which a drawing was made by
Mr Smyth, which was decided to be iden-
tical with Solender's *Lobus luteus*. They
are no doubt distinct species. The figure
in the Zoology of the "Plover" is very char-
acteristic, but the artist has not represented
the vertical streaks or ventral fins! It would
be well to remark that the above figure
was copied from Solender's drawing. In
Perry's Japan Ex. is a wretchedly drawn
figure of a fish which is referred to
this species. Cuvier and Richardson says
that *Lobus gallus*, of Gershal is the same
as the *f. lunaris*. No doubt two or three
species are confounded in the synonyms quoted.





Julis lunaris



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N NATURAL
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Gulio ^{whitii} sp. (1882)

X 2
334

D. 4-5; A. 3; P. 1; V. 1-5; C. 1

This species is nearly similarly
arched on both dorsal and ventral region.
The greatest depth of the body, which
equals the length of the head, falls
a little short of a fourth of the
total length of the fish.

The dorsal fin commences
over the hinder opercular angle,
and extends over a base twice the
length of the head, or about twice
the base of the anal fin. The can-
dal is slightly obliquely truncate.

Color of the upper half of
the body, dark sap-green, the lower
half light pink, and the two colors
separated by a median longitudi-
nal mottled blackish band.
A parallel emerald green band
traverses the lower third of the
body, in which the scales are

NATURAL
HISTORY
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marginated with light red. The head is emerald-green, decorated with copper-red darker marginated irregular shaped bands, of which three radiate posteriorly from the orbit, one anterior, and a narrow elliptical one on the lower part of the head. Irides saff-green.

The dorsal and anal fins are emerald-green, the former the darker and traversed by a median horizontal blue marginated vermillion band, and further ornamented by two anterior blue-black spots. Pectorals light yellow. Ventrals pale pinkish-flesh. Caudal light yellow, colorless on the posterior margin, and edged above and beneath with vermillion.

Length $3\frac{3}{4}$ inches.

Habitat. Huahine Is.

We have seen but a solitary example of this *Gulis*, which was caught in May, 1873.

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MUSEUM



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334



Julis whitmii
(La f. 145 F. 1)



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HISTORY
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Julis Imperator, Luzet & Guin.

Julis Imperator L. Ag. Voy. Brez. met
p. 268, pl. 56, fig. 2.

D. 6; L. 8-13; A. 2-11; V. 1-5; P. 15; C. 1, 1, 6, 6, 1, 1.

The head comprises a fourth of the total length, measuring from the end of the snout to the tip the middle caudal rays, or equal to the greatest depth of the body. The upper line of profile exhibits a slight but regular arched curvature. The eyes are large, circular, their diameter entering five times in the length of the head. There exists 13 horizontal rows of scales between the dorsal fin and the abdominal line, not enumerating a series of minute ones along the base of the former fin. The tubes of the lateral line are mostly trifid and mark 27 scales.

The spiny portion of the dorsal fin is low, the anterior rays gradually increasing in height to the soft ones, whence the fin tapers away posteriorly. The ventrals are pointed and the pectorals are slightly concave on their hinder margins. The caudal fin has the upper and lower rays more or less prolonged, the lower beyond the upper, so as to give the fin a lanceolate form.

Color rich green, paler beneath, the breast and anterior portion of the body dark buff yellow, the two green colors separated by a pale diffused greenish bar. Flanks marked with rose-red vertical interrupted lines like J. sandrichensis. Head indigo-blue.

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HISTORY
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lighter colored beneath. Sides green.
Dorsal fin purplish, anal bluish-
green, with a wide upper and lower
purplish border. V. bluish green. Ven-
trals nearly colorless. Pectorals marked
by a blue-black basal bar, and an
oblong large spot of the same color,
which covers their outer tips.

Length 6 inches

Habit - Sandwich Isls.

A common species called by
the natives "He-ma-lee"



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HISTORY
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898

Gubia Sundrichensis, Garrett

P. 6; D. 8-13; A. 3-11; V. 1-5; P. 14; L. 1, 1, 4, 4, 1.

The head constitutes a little more than a fourth of the fish, and the eyes are sub-circular, their diameter entering about six times in the length of the head, and twice in a diameter of their own orbits. The upper and lower profiles of the body are nearly similar in their curvature, the upper line slightly more arched than the lower, and the greatest depth of the body equals one-fourth the total length. There may be enumerated 15 horizontal rows of scales between the dorsal and ventral line, not counting the small irregular ones along the base of the dorsal fin. The median row contains 25 to 27 scales, and the lateral line traverses 28 scales in its course to the tail.

The dorsal fin commences at a point a trifle posterior to the hinder corner of the opercle flap, and extends over a base twice the length of the anal fin. The ventrals when bent back do not reach the anal by more than their own length, and the caudal is truncate.

Color flesh-green, darker above and paler beneath. The flanks are ornamented by vertical brownish-red lines, which are more or less interrupted, two crossing each scale, and gradually dilating into spots posteriorly. Head purple-red above, becoming much paler beneath. Sometimes the caudal trunk is nearly covered with a large black spot, which

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HISTORY
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more or less spread over the caudal
fin. Ventrals golden yellow, bordered with sage
green. Dorsal fin amber yellow, with
a reddish tinge along the base. Anal
light reddish, and the caudal amber
yellow. Ventrals nearly colorless and the
pectorals have amber yellow rays.

Length 7 inches.

Hab. Sandwich Isls.

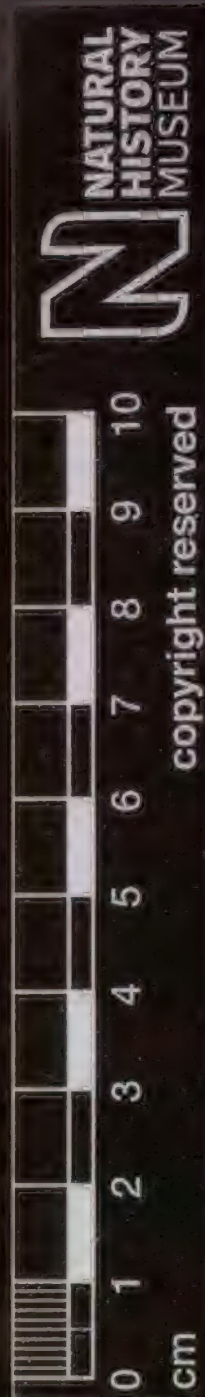
A common species called by
the natives "He-na-tea-lu-wa-hi-ne."



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204

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336

Thalassoma
(Fishes)

205

Gul's ^{*purpurea*} sp

337

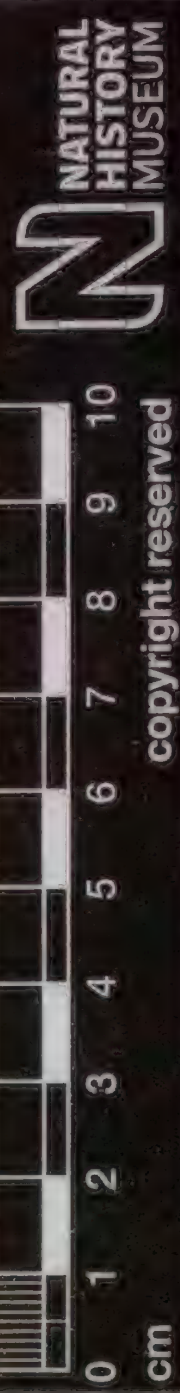
D. 5-13; A. 3-11; V. 1-3; P. 16; C. 3, 1, 1, 1, 1, 3.

The general aspect of this beautiful species is elongate-oblong, with the dorsal curvature slightly more depressed than the ventral region. The depth of the body, taken at the origin of the anal fin, falls a little short of a fourth of the total length, which latter as compared to the length of the head is as eleven to three. The head exhibits a slight depression in the occipital region. The eye is oval in shape, its greatest diameter entering about eight times in the length of the head, and a little more than three times between its own orbit and the end of the snout. The lateral line which is composed of arborescent tubes, passes over 26-28 scales.

The dorsal fin takes its origin



H.



immediately over the hinder opercular flap and passes over a base nearly half the length of the fish. Its spiny portion, which occupies a base equal to two-thirds the length of the head, gradually increases in altitude to the last spinous ray which is twice as tall as the first. The soft portion of the fin, together with the anal, gradually tapers away posteriorly. The ventrals are small and when laid back reach half way to the origin of the anal fin. The pectorals are somewhat pointed and in length equal one-third the base of the dorsal fin. The ~~dorsal~~ caudal can = spines one-eighth of the total length of the fish and has the angles slightly produced.

Color rich green, passing into bluish green beneath the body and light blue beneath the head and throat. The body is ornamented

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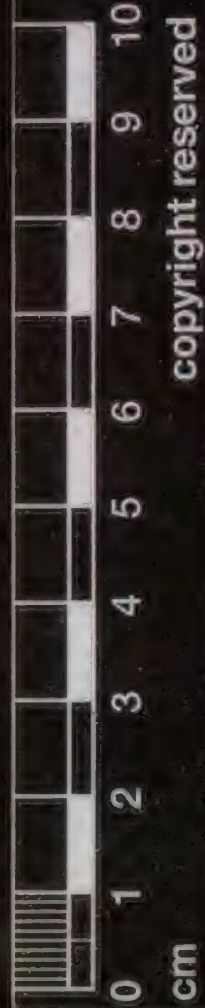
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by three longitudinal serrated ver-
million red stripes, which are more
or less united by irregular vertical
lines. The upper stripe traverses the
dorsal region, the middle one on,
or a little above the median line,
and the lower one starts from the
lower portion of the base of the
pectoral fins. The head ornamentation
may be best understood by consulting
the figure. Irides green with a
red ring next to the cornea. The
dorsal fin is rich green, traversed
its whole length by a wide vermilion
red band. Anal light blue, the
lower third green, and the basal
half with a horizontal vermilion
red band edged beneath with blue
black. Ventrals pale light blue.
Pectorals with the basal third light
green, the upper margin light
blue and the upper posterior
portion with one or two diffuse blue



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NATURAL
HISTORY
MUSEUM



black spots. The caudal is dark green changing into light green posteriorly. The basal portion of the fin horizontally striped with purple.

Length 14 inches.

Habitat: Society Isls.

This species though not abundant, ranges all through Polynesia.

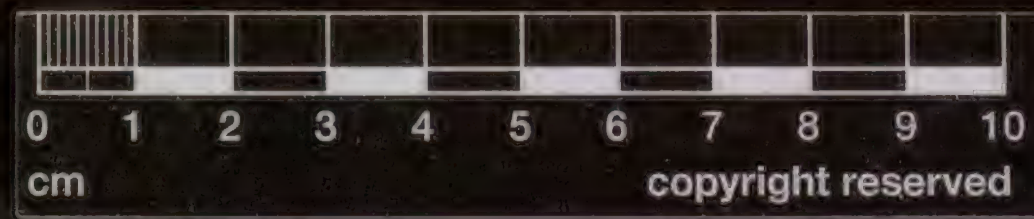


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st. *Julis, kailashum*
(Ref. 149)



*fusca*Gulis No 209.

D. 6; A. 8-12; S. 2-11; P. 1-5; P. 15; C. 2, 1, 6, 6, 12.

This species has the upper and lower profiles nearly similarly arched. The greatest depth of the body, which is equal to the length of the head, is nearly a third of the total length, caudal fin excluded. Both profiles of the head are gently and similarly arched, the upper exhibiting a slight depression over the eyes. The eyes are sub-circular, their diameter entering seven times in the length of the head, and three times between their own orbits and the end of the snout. In the median row ~~one~~ of the body may be counted 26 or 27 scales, 13 horizontal rows in the greatest depth of body, 9 rows on the caudal trunk, and the lateral line which exhibits suberoseous tubes passes over 25 to 26 scales, 19 of which are above its point of deflection. In addition to the usual teeth which characterizes the genus, there may be observed a few flat granular ones near the end of either jaw.

The dorsal fin rises over the hinder corner of the opercular flap and tapers either way from the first articulated ray. Its spring portion is as long as the pectorals, and its soft part extends over a base as long as the head. The anal fin commences just opposite the second articulated dorsal ray and terminates with that fin. Its anterior portion is rounded off and tapers away posteriorly. The ventrals when laid back do not

NATURAL
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reach the anal fin by once their own height. The caudal is large, truncate, with the angles slightly prolonged.

Color somewhat variable, generally a tawny-pink along the dorsal region, and the flanks vermillion red, passing into a fine ochre-yellow beneath, or orange red. Some times the anterior fourth of the body is of a tawny-green. It is best characterized by two horizontal series of oblong sub-quadrate vertical rich blue spots, whose centers are more or less tinged with sap-green.

The upper series of spots are on a level with the eyes, and the lower on a line with the base of the pectoral fin. Head tawny green or olive-yellow.

A few black spots mark the dorsal region. Ventrals sap green. Dorsal tawny-pink margined with rich blue. Anal bluish on the lower half, the upper tawny-pink. Ventrals light blue. Pectorals yellow becoming blue posteriorly. Caudal tawny on its basal half the outer portion with horizontal streaks of blue and vermillion red.

Length 10 inches

Hab. - Sandwich Isls. Society Isls, Kingman's Isls.

A rare species called Awa-la at the former group.

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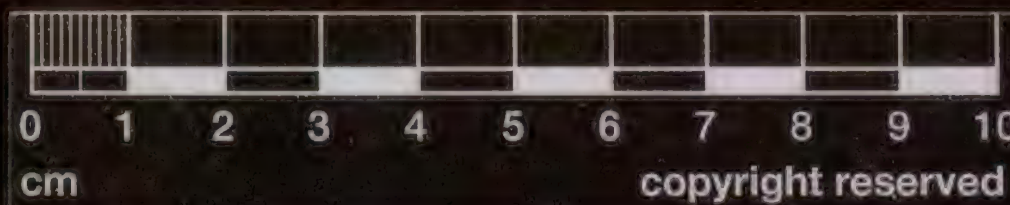
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Julis fusca
(Forsk.)



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amblystoma
Gulis tessellatus, ~~gambelii~~

D. 9-12; A. 3-12; P. 1-3; V. 15; C. 2, 1, 5, 6, 1, 2.

The head comprises a fourth of the total length. The upper and lower outlines of the body are gently arched. The diameter of the eyes enters about six times in the length of the head, and are situated just two diameters posterior to the end of the snout. The lateral line contains twenty-eight scales in its course, and the tubes are from three to five branched.

The dorsal fin extends over a base equal to about half the length of the fish; the first soft ray is the tallest, the others decreasing in altitude either way. The anal is nearly half as long as the fin above, with which it terminates, and gradually tapers away posterior to the anterior soft ray. The small ventral when laid back do not reach the anal fin by more than their own height. Dorsal convex posteriorly where the curves are slightly produced into sharp angles.

Color dark green, becoming black

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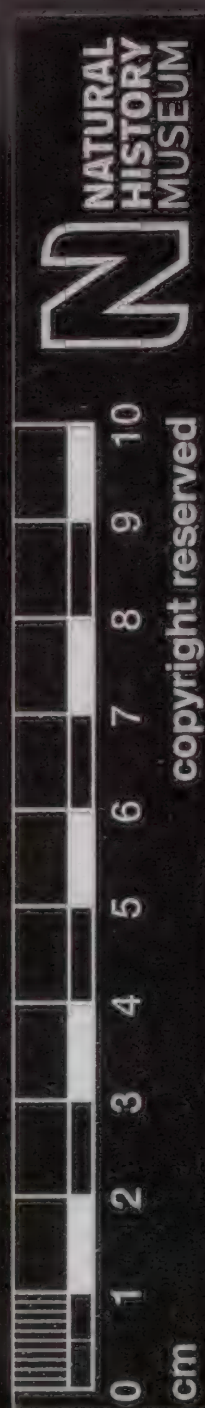
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white beneath. The body is ornamented with three horizontal, separated coppery-red bands, which are united by vertical streaks, which gives a somewhat laced appearance. The head and upper anterior portion of the body is spotted with brown red, and a few angularly dispersed stripes of the same color may be observed on the snout, gill covers and breast. Sides covered with light red and safe green. The dorsal and anal are light copper red, margined with blue and each traversed by a safe green band, the former with a large anterior black spot. Caudal light greenish yellow, the upper and lower margins copper red, edged with bluish green, and the basal half is horizontally streaked with the former color. Pectorals colorless, except the terminal portion which is dusky, and a small blue black spot marks the upper base. Ventrals steel blue.

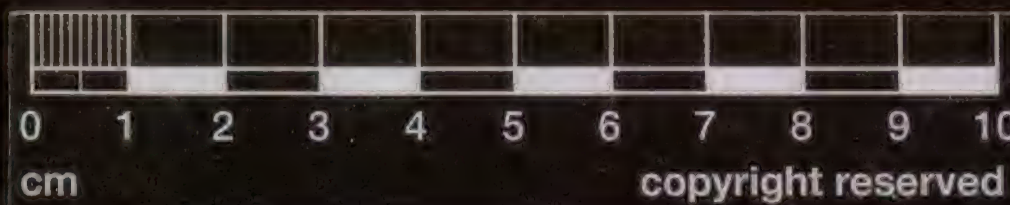
Length, 7 inches.

Habitat: Sandwich Is., Society Is.,
Kingman Is.





B. falis umbrostigma
(Laf. 149.)



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güntheri, Bleek.
Gulis formosus, Solander.

Labrus formosus, Solander, M. S.

Scaurus? quinque-vittatus, Bennett, Zool.

Mag. Blossom, Fishes,

p. 66, pl. 19, fig. 2.

D. 8-12; A. 3-11; V. 15; P. 14; C. 3, 1, 6, 6, 1, 2.

The greatest depth of the body as compared to the entire length of the fish is as two to nine. The head enters just four times in the total length. The eyes are circular, their diameter being one-fifth the length of the head, and the hinder limit of their orbit is exactly midway between the end of the snout and the hinder corner of the opercle. The dorsal fin takes its origin immediately above the anterior base of the pectorals; its spiny portion is comparatively low and much shorter than its soft part. The anal is not so long as the latter part of the dorsal. The posterior margin of the caudal is emarginate.

Body rich green, paler beneath. Throat bluish-white. The upper half of the body is traversed by two serrated red bands, and two short oblique ones just in advance of the pectorals. A small black spot marks the pectoral axilla. The top of the head is

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purple-red, passing into light red beneath. Sides ornamented with two arched, emerald green ribbons, the upper one interrupted by the eye and the lower one bounds a pale greenish space below. Similar ribbons pass over the head from eye to eye. Ventrals light green. A black spot marks the anterior end of the dorsal fin, which latter is light bluish above and light red beneath. Anal plain light steel-blue. Caudal light orange, which passes into grass green anteriorly; its upper and lower margins are red. Pectorals and ventrals nearly colorless, the former more or less tipped with blue-black.

Length, 6 inches.

Habitat.—Society Isls, Kingman Reef, Palmyra Isls. Loo Choo Isls.

Remarks.—A common species characterized by the arched ribbons on the head, the black spot on the dorsal and the emarginate caudal. The figure of this species in the Zoology of the Blossom is from a drawing made at the Loo Choo Isls, but is faulty in many respects, yet I do not hesitate in referring it to Schneider's *Saburus formosus*.

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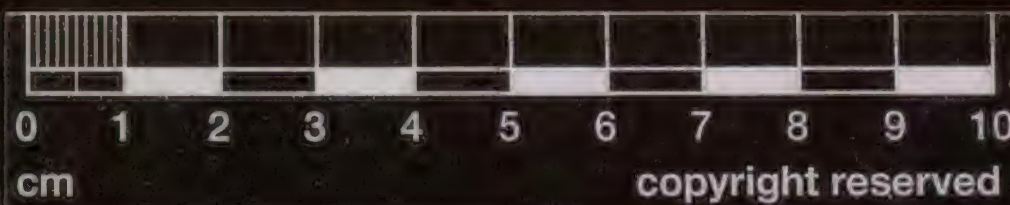


340



Thalassoma purpuraceum
(Ref. 144. Fig. C.)

207



N NATURAL
HISTORY
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Gulis dorsalis, Quoy et Gaim.

Lobrus pulcherrimus, Solander, M. S.

Sparus Hardwickii, Bennett, Fishes of Ceylon, 12.

Gulis dorsalis, Quoy et Gaim., Zool. Voy. Astrolabe,
Vol. 1, p. 713, Pl. 15, fig. 5.

" " Cuv. et Val., Hist. Nat. Des Poiss.
Vol. 13, p. 448.

" " Richardson, Rep. Brit. Mus. 1845
p. 267.

D. 8-13; A. 2-10; V. 1-5; P. 10; C. 2, 1, 6, 5, 1, 2.

The greatest depth of the body equals the length of the head, which latter falls a little short of one-fourth of the total length of the fish. The eyes are circular in form, and their diameters enter five times in the length of the head. The dorsal fin arises a trifle posterior to the rounded corner of the opercular flap, and passes over a base equal to about half the length of the fish, caudal excluded; it tapers either way from the first soft ray. The anal takes its origin opposite to the second soft dorsal ray, and tapers off posteriorly. The caudal is truncate with the upper and lower angles considerably prolonged into sub-triangular points.

Color of the upper half of the head and body, rich dark green, passing into blue

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HISTORY
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ish or bluish-white beneath. Sides of the body marked with six, tapering, slightly obliquely descending black fasciae, the first the longest, the others gradually becoming shorter, and the anterior pectoral ascending the dorsal fin where they run into a similar colored band which traverses that fin. Two or three spots on the nape, and the pectoral axillae black. Two, more or less interrupted serrated stripes along the upper half of the body, irregular short fasciae margined with blue radiating from the eyes and on the gill covers, light red. Sides golden yellow. All the fins slightly tinged with yellow, the caudal margined above and beneath with lively yellow and an submarginal light red streak. An oblong slate colored spot, shaded off with purple, marks the anterior half of the anal fin.

Length, 7 inches.

Habitat.—Society Isls, Pan mutu Isls.
Hervey Isls, Isle of France, Ceylon, China.

Remarks.—A common species at the former location where it is called "Paou". The black descending bars are its most prominent characters.

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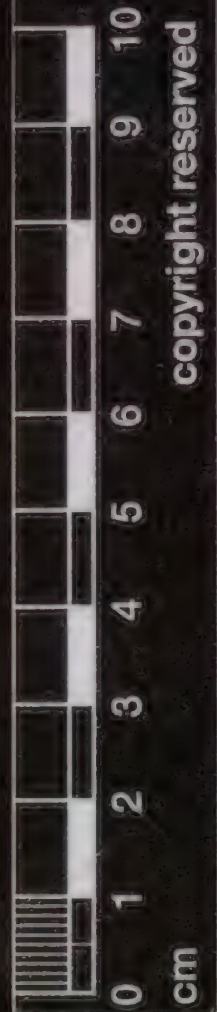
Gulis bilineata, ^{melaschis} Garrett.

D. 9-13; A. 2-11; L. 1-5; P. 14; C. 2, 1, 6, 6, 1, 2.

The head constitutes one-fourth of the total length, caudal excluded. Eyes circular, their diameter entering four times in the length of the head, and once in advance of their own orbit. The general shape of the body is rather slender, its greatest depth being equal to the length of the head. The dorsal fin commences above the hinder angle of the opercle and tapers slightly either way from the first soft ray. The caudal is more or less crescent shaped.

Color greenish-yellow, tinged with pale violet beneath; the posterior three-fourths of the body is marked with close, vertical, narrow, more or less interrupted pinky-red streaks, which become maculations on the trunk of the tail. The head is dark blue above, passing into green on the snout and light blue beneath. Two rusty-brown lines traverse the length of the head, both starting from the snout, the upper passing through the eye and terminating at the opercular angle. Irides green; cornea blackish-green. The dorsal fin is rose-red and

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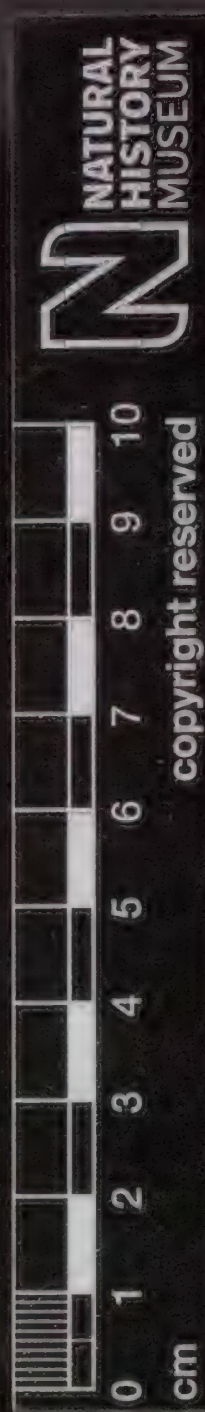


its soft portion is margined with black.
Anal pale carnation. Caudal colorless,
except its upper and lower margin which
is pinky-red. Ventrals colorless. Pectorals
yellow, their posterior third black, glossed
with blue, and a small deep blue-black
spots marks the upper basal portion.

Length, 6 inches.

Habitat.—Society Islands.

Remarks.—A rare species, of which
I have seen three specimens.



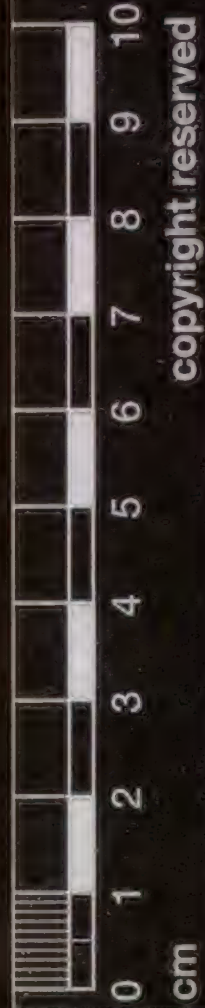
Julis dorsalis

200

341



NATURAL
HISTORY
MUSEUM



Julis melanocia

342

201

Amogilis biocellatus, Garret

D. 9-12; A. 9-12; P. 1-5; V. 1; C. 2, 1, 1, 1, 1, 2.

This little species is rather slender, and the head, which is pointed constitutes about one-third of the total length, the caudal fin excluded. The eye is very large, subcircular, and comprises nearly a third of the length of the head. The scales are very small.

The dorsal fin commences a trifle in advance of the opercle corner, and the anal is very long. The caudal rounded, the ventrals small and the pectorals a little larger than the ventrals.

The ground color of the immature specimen before me, which measures one and a half inches, is diluted white. The head, shoulders and breast are clothed with small roundish blackish brown spots. The posterior end of the caudal trunk is black. The body is marked above with two large vermilion spots, one just behind the tip of the pectoral fin and the other beneath the hinder termination of the dorsal fin. The sides which are silvery are dotted like the head; cornea black. The dorsal fin is ornamented with two large ocellations which are confluent with the red spots on the body, and consist of a black pupil, a white and a black ring. Scattered over the fin may be observed small irregular purple red spots. The anal fin is

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0 1 2 3 4 5 6 7 8 9 10
cm



Blackish, becoming paler toward
its base and the external margin is
white. Ventral colorless, except the rays
which are edged with light red. Tentacles
and pectorals colorless.

Length 4 inches see description
only $1\frac{1}{2}$ " long

Hab. - Society Is.

A very dubious fish, size of scales quite unreliable
figure not fit for reproduction or description



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Gulis fraenatus, Got

D. 8/13; A. 2/11; V. 1/5; P. 14; C. 3, 1, 6, 5, 1, 2.

The head of this *Gulis* is rather obtuse, and comprises two-ninths of the total length of the fish. The height of the body as compared to the entire length of the fish is about one to five. The eye is circular, its diameter entering nearly five times in the length of the head, and once in advance of its own orbit. The teeth are the same as in *Gulis caeruleocephalus*. The arcuate tubes of the lateral line pass over 28-29 scales. There may be enumerated 12 rows of scales between the dorsal and abdominal series.

The dorsal fin commences above the opercle flap and passes over a base just half the entire length of the fish, excluding the caudal forks. Its spiny portion is not quite as long as the head. The anal is full as the latter organ. The small ventrals are inserted beneath the hinder base of the pectorals. The caudal is truncate behind and the two angles are prolonged in acuminate points about one-third the length of the fin. The upper third is greenish-gray and the lower half is bluish gray with a tinge of yellow along the abdomen. A slate colored band extends from the end of the snout and runs straight to the base of the caudal. Its lower margin is sharply defined and the upper is shaded off. An orange line edged with blue black bounds the lower margin of

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HISTORY
MUSEUM



portion of the slate band which traverses
the head, a second line of a pink color
edged with blue passes from the angle
of the mouth obliquely downwards across
the gill covers. Sides yellow. Dorsal dusky
slate. Anal pale olivaceous with a colorless
margin. Pectorals tinged with yellow
and tipped with blue-black. Caudal and
Ventrals colorless, the latter former with
the upper and lower margins shaded off
with soiled orange-yellow.

Length 3 to 4 inches.

Hab. Society Is.

A very rare species.



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Julis amblycephala

202
343

203
344



Gomposus tricolor, L. et G.

211

345

D. 5; P. 8-10; A. 2-11; V. 1-5; P. 1-1; C. 1, 1, 4, 6, 1, 1.

The ventral arch is not so much depressed as the dorsal line, and the greatest depth of the body is about the length of the base of the anal fin. The head which is about one third of the total length of the fish, is depressed above and the snout measuring from the eyes comprises about a fifth of the total length. The eye is circular and enters eight times in the length of the head.

The dorsal fin commences over the base of the pectorals, its spring portion which is quite low extends over a base half the length of the head, and the rays gradually increase in altitude from the first to the last. The height of the soft portion equals two diameters of the eye, which elevation is maintained throughout its whole course.

The anal fin arises opposite the second soft dorsal ray and corresponds with that fin. Its anterior third is arched and the remainder about the same depth throughout.

The ventrals are small, acutely pointed and the pectorals are rather large. The caudal is more or less deeply emarginate posteriorly.

Color rich dark green which gradually passes into bluish green on the breast and at lower. A yellowish shade marks the humeral region. Each is marked with an oblong vertical violet spot. Head dark dusky green.

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MUSEUM

2

0 1 2 3 4 5 6 7 8 9 10
cm

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above and light bluish green beneath.
Irides pale green varied with brown. The
dorsal anal and light sap green tinged
with red along their bases. Ventrals col-
orless. Pectorals sap green on their basal
portion, the middle blue and margined
with black. The caudal is sap green,
margined with lemon yellow and its
scaled basal portion dark green.

Length 4 inches.

Habitat. — Sandwich Is. Society Is.
Kingman Is.

At the former group, where we
obtained the example figured, its native
name is Honalea nuka loa kele.

cm

0 1 2 3 4 5 6 7 8 9 10

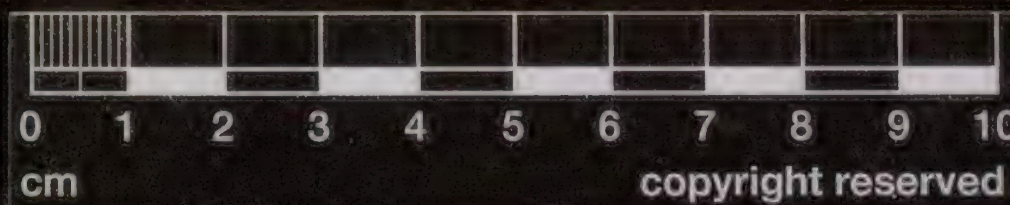
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Somphonus tricolor



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*Callyodon genistriatus*Le. Provider no 464

The general aspect of the species is robust, and the head which comprises a fourth of the fish, is obtuse in front, tumid upward and forward of the eyes, and the chin large and rounded. The eyes are circular, their diameter entering five times in the length of the head.

The dorsal fin commences in advance of the opercular angle and the spiny portion which is composed of flexible rays is a little longer than the soft portion, which latter is slightly arched. The anal fin takes its origin opposite the first articulate dorsal ray and is slightly arched. The ventrals are rounded and the pectorals are broad, the upper posterior angle slightly prolonged. The caudal is large and biemarginate posteriorly.

D. 9-11; A. 3-10; V. 1-5; P. 14; 6, 3, 1, 5, 5, 1, 3.

Color olivaceous brown passing into bluish green beneath. Each scale with an oblong vertical red spot, which become rounded posteriorly and gradually becoming paler beneath.

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cm

Head spotted and banded with red,
the bands mostly radiating from the
orbits and forming reticulations on the
upper part of snout and interocular space.
Irides yellowish green, varied red. The
dorsal and caudal are dark bluish green,
reticulated with red and the latter
colorless on its hinder margin. The
anal is light bluish green, reticulated
with red on its basal half. The ventrals
are light green, the rays light red. The
pectorals are light green on basal and
upper margin, the middle orange, spotted
green and the hinder margin colorless.

Length 20 inches.

Hab. Sandwich Isl.

cm

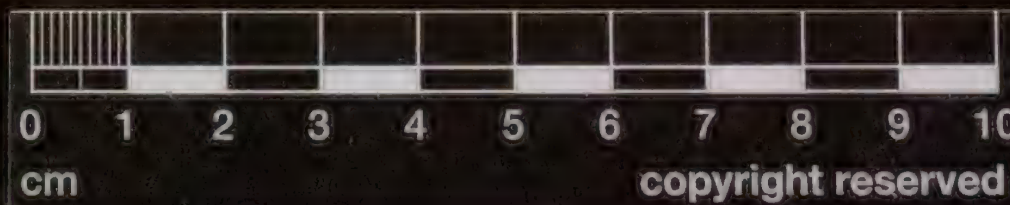
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Callyodon genivittatus
(Tafel)



Labioides 10220

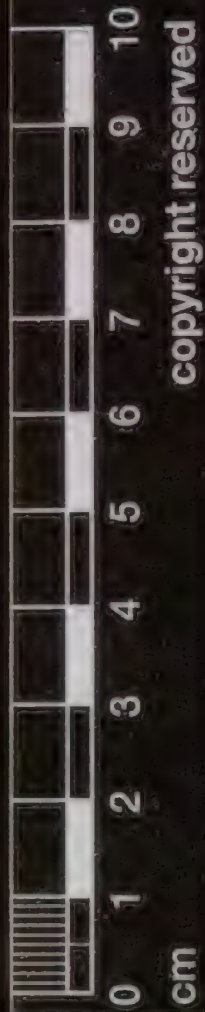
D. 9-10; A. 3-8; V. 1-5; P. 12; C. 3-1-6-5, 1, 2.

This species is nearly similarly marked above and beneath. The greatest depth being not quite one third of the total length. The head, which comprises a fourth of the fish, is rather obtuse in front, with a slight depression on the snout, and the circular eye enters six times in the length of the head. The scales are very large, and the water tubes of the lateral line are arborescent.

The dorsal fin arises over the origin of the lateral line and passes over a base nearly half the length of the fish. The caudal is slight by convex on its hinder margin, and the upper and lower angles are slightly prolonged. The anal fin is a little shorter than the soft portion of the dorsal.

Color, brownish olive on the upper two-thirds, the lower parts reddish, and the scales with small irregular bluish white or greenish white spots. Ventrals light brownish. The dorsal fin is reddish olive with obsolete pale spots.

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canal brownish above with deeper
shades and a few faint pale spots.
Anal and ventrals light red, the former
with a subbasal vermillion washed
band and pale spots. Pectorals above,
becoming colorless outwardly.

Length 10 inches.

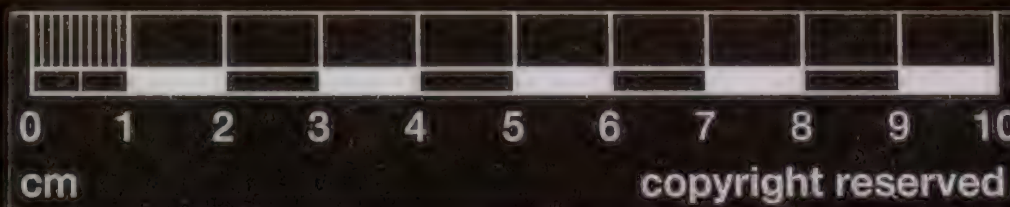
Hab. Sandwich Isl.



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Thalassoma sandaricentis
(Lafite 151)



Scarus ^{*garnoti*} ~~*faciatus*, *Garnott*~~

Plate 409

B. 5; D. 9-10; A. 2-10; V. 15; P. 14; C. 3, 1, 6, 5, 1, 2.

Form rather elongate, and nearly similar in outline both above and beneath. The greatest depth equals the length of the head, which latter is a triple more than a fourth of the total length. A slight concave depression may be observed above and forward of the eyes. The eye is large, circular its diameter being two-thirteenth of the length of the head. We enumerate thirty scales marked with the lateral line tubes, which latter are less divided than usual.

The pectorals are well developed, but all the other fins are of moderate depth. The caudal has its upper and lower posterior angles produced into elongate triangular tips.

Color, grayish amber, with five, wide, diffuse, vertical, steel blue bands which are narrower than their interspaces. Four or five abbreviated blue stripes radiate from the upper and lower limbs of the orbit. A band encircling the snout and one extending from the angle of the mouth to the eye, blue. Ventrals straw color. Ventrals tinged with pale carmine. Pectorals faded yellow becoming more intense toward their tips. Dorsal, anal and caudal, amber, the two former with a longitudinal basal, and infra marginal blue band. The latter fin is margined with the same color above and beneath.

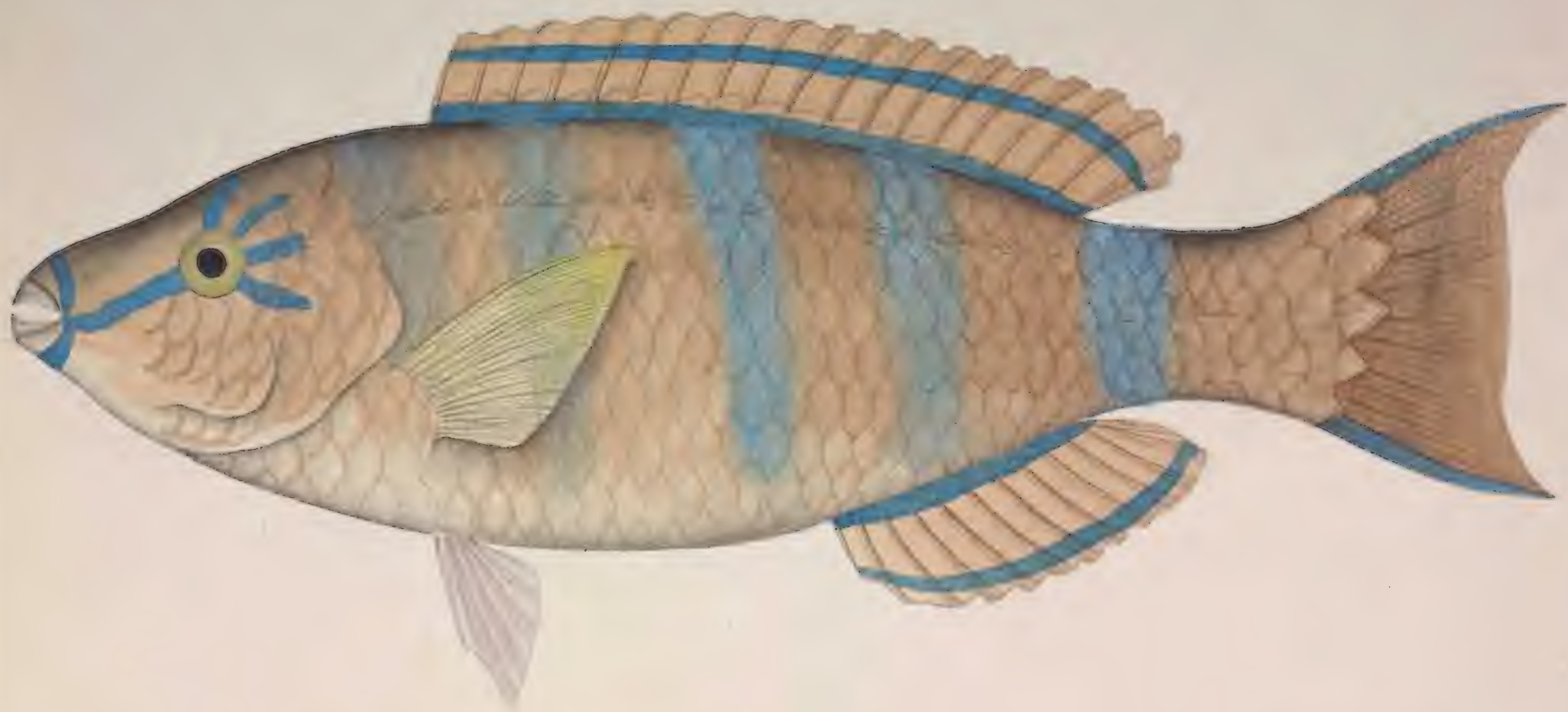
Length, 12 inches. Habitat. Kingman's Is. Remarks. Native name "Tou-ru" The color of this species is unique, and will at once distinguish it.

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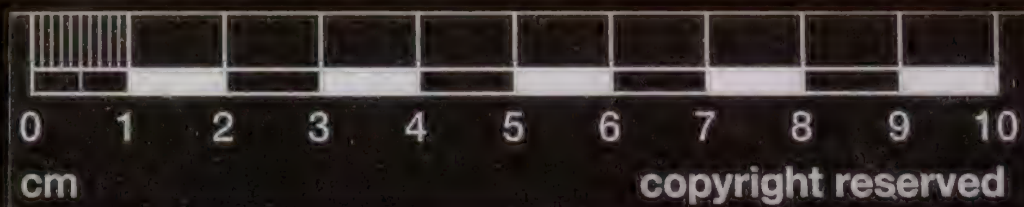
2

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0 1 2 3 4 5 6 7 8 9 10 cm



Pseudocaranx parroti
C. S. F. C.



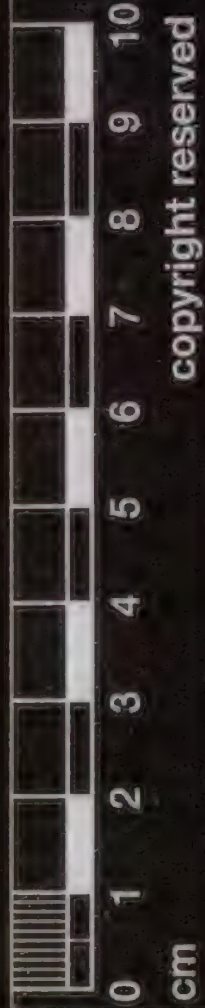
glohiaps
Scurus limbifrons, Gerritt.

R. 5; D. 9-10; A. 3-4; V. 1-5; P. 13; C. 2, 1, 6, 5, 1, 1.

The head comprises a little less than a fourth of the total length. The upper line of profile above the eyes is very prominent, and the snout is slightly concave above. The eyes are sub-circular, and comprise one-seventh of the length of the head. Three concentric rows of scales on each cheek. The upper jaw is covered by the lip, and, together with the lower is provided with a spine at the angle of the mouth. The caudal has a deep concave posterior emargination and acute angles.

Color green, gradually passing in to sap green beneath. Scales marked each with a vertical line more violet and carnation spot, which unite on the peduncle of the tail and assume roundish maculations. The scales along the lower portion of the flanks are traversed by broken longitudinal carnation bands. A purple-brown spot marks the base of the pectorals. The upper anterior half of the body dotted with green. Two transverse violet bands enclosing a green one, on the interocular space. A violet reticulated wide

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band extends from the eye to the opercular corner. The middle of the head is emerald green which passes into sap-green beneath. Lower part of head bluish-green. Irides golden with olive shades. The dorsal fin is amber-yellow margined above and beneath with bluish-green, and traversed by a horizontal pale green stripe which breaks into spots in the soft portion of the fin. The anal fin is carnation along its basal portion, amber yellow beneath and margined with bluish-green. Ventrals amber-yellow margined anteriorly with bluish-green. Pectorals pale greenish, widely margined above with dark green and a violet stripe. Caudal sap-green, edged above and beneath with dark green and an intra marginal violet stripe.

Length, 12 inches.

Habitat. Society Isls.

Remarks. A common and very beautiful species called at the Society Islands "E-u-hu pa-ha-ro-u."

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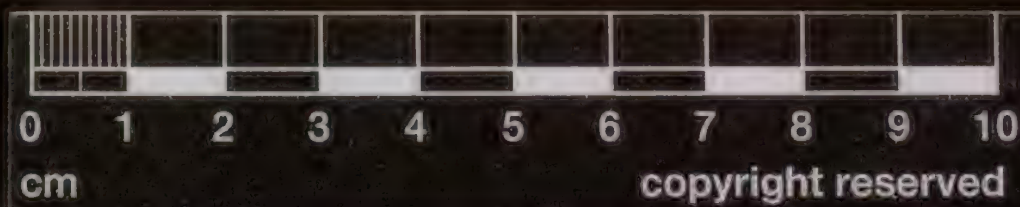
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0 1 2 3 4 5 6 7 8 9 10
cm



*Pseudoscarus globiceps*

right gut



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oviceps.

Searus curvifasciatus, Garrett.

B. 5; D. 9-10; A. 2-4; V. 1-3; P. 13; L. 2, 1, 6, 5, 7, 1.

The head, which constitutes one-third of the total length, caudal excluded, is slightly concave upward and forward of the eyes. The height of the body is slightly more than the third of the entire length, excluding the caudal fin. The eyes are sub-circular, situated about midway between the end of the snout and the hinder termination of the opercle, and their diameter comprises nearly a seventh of the length of the head. There are three concentric rows of scales on each cheek.

The dorsal fin commences a trifle posterior to the opercular flap, and extends over a base, which is equal to half the length of the fish, caudal excluded. The ventrals are pointed, their length half as long as the head, and when laid back do not reach the anal by more than their own height. The caudal is convex along its posterior margin and the upper and lower angles are prolonged into points.

Color of the lower portion of the head and breast bluish-gray, and the posterior

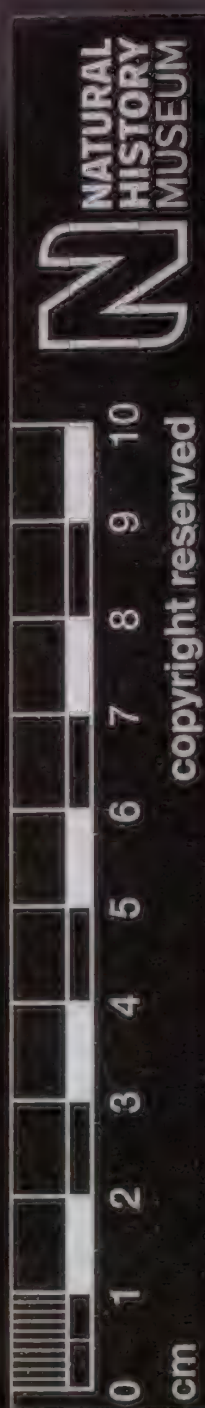


half of the body is gray. The upper part of the head and anterior dorsal region is of a slate color. The middle portion of the head and the anterior middle part of the body, yellow. A blackish-slate broad diffuse band passes from the end of the snout, through the eye as far as the middle of the pectorals whence it suddenly curves up to the dorsal fin. A large oblong vertical diffuse yellow spot on the upper posterior portion of the body. Fins grayish-silver. The dorsal fin is slate livid and faintly clouded with dusky. Anal bluish-steel with a livid tinge between the rays. Caudal light yellow. The ventrals and pectorals nearly colorless, the former tinged with livid and the latter with light steel blue.

Length, 12 to 14 inches.

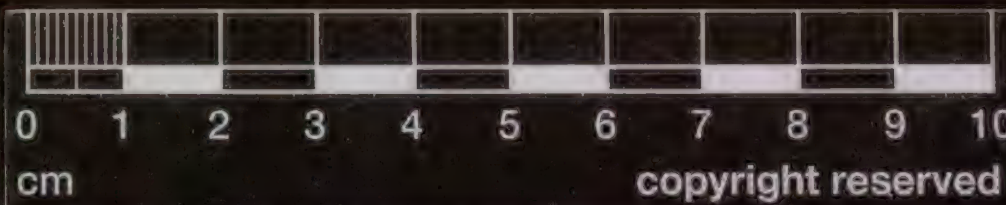
Habitat.—Society Isls, Paumotu Isls.

Remarks.—At the former location this species is called "Hau" by the natives. Its peculiar markings will readily distinguish it from any other species.





Pseudocarus oviceps
(Zajac 1952)



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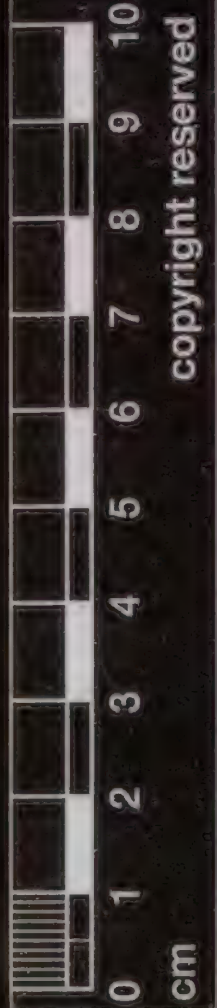
costatus
Searius mamaree, Garrett.

B. 5; D. 9-10; A. 3-8; V. 1-5; P. 14; C. 2, 1, 6, 5, 1, 1.

The general aspect of this *Searius* is robust. The ventral outline is more arched than the dorsal, which latter is slightly depressed along the head. The greatest depth of the body exceeds the length of the head. The snout is rounded and projects in advance of the jaws. The upper jaw is armed with a premaxillary spine which projects laterally from the angle of the mouth. The eyes are oval, their greatest diameter entering about seven times in the length of the head and three times in advance of their orbits. There are twenty-two scales along the median line of the body and twenty six may be counted in the course of the lateral line.

The dorsal fin commences immediately above the hinder termination of the opercle flap, and together with the anal are of moderate depth. The large caudal is crescent shaped.

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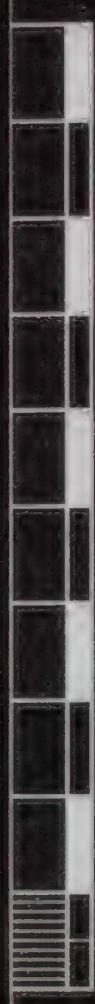
Dorsal region and upper part of the head emerald-green. Flanks flesh-white, and bluish-white beneath. Ventral trunk light green. Scales margined light red. The upper lip is edged with copper color shaded off with bluish-green. Lower lip edged with the latter hue and a broader band of copper color, posterior of which may be seen two parallel abbreviated bluish-green stripes. Irides whitish-yellow. Dorsal and anal light red, margined throughout with bluish-green. Ventral very pale greenish, margined above and beneath with emerald-green and an intra-marginal violet stripe. Ventrals and pectorals nearly colorless except a slight tinge of light green.

Length, 18 inches.

Habitat.—Society Isls.

Remarks.—A single specimen of this Scarus was obtained at the Society Islands, where it is called "Ma-ma-rea". Its most obvious character is the produced snout, crescent shaped tail and peculiar color.

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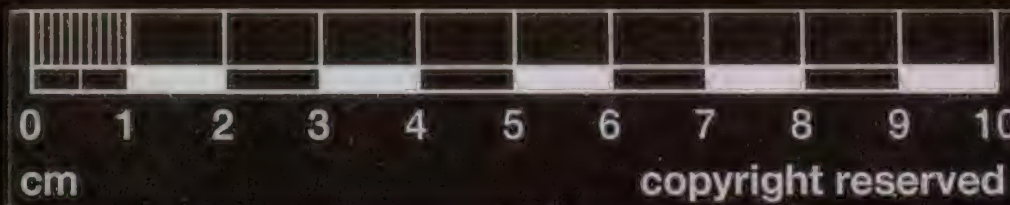
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Pseudoscarus corbularius
(Laf. 154)



Scarus ^{*footei*} ~~*versicolor*, *garnett*~~

B. 5; D. 9-10; A. 3-9; I. 1-5; P. 13; C. 3, 1, 8, 5, 1, 2.

The head, which constitutes about one-fourth of the entire length of the fish, presents a concave depression upward and forward of the eyes. The greatest depth of the body equals one-third of the total length, caudal excluded. The eyes are circular in form, their diameter entering nearly seven times in the length of the head, and the hinder limb of their orbit is just midway between the end of the snout and the hinder termination of the opercular flap. The upper jaw presents one or two lateral spinules which project from the angles of the mouth. Three concentric rows of scales on each cheek. The dorsal fin extends forwards as far as the origin of the lateral line. Ventrals pointed. Caudal large, convex behind, and the two angles considerably prolonged into triangular points.

Body dark green passing into violaceous-pink beneath. Each scale on the former color is ornamented with a vertical line or deep violaceous-pink spot which change into

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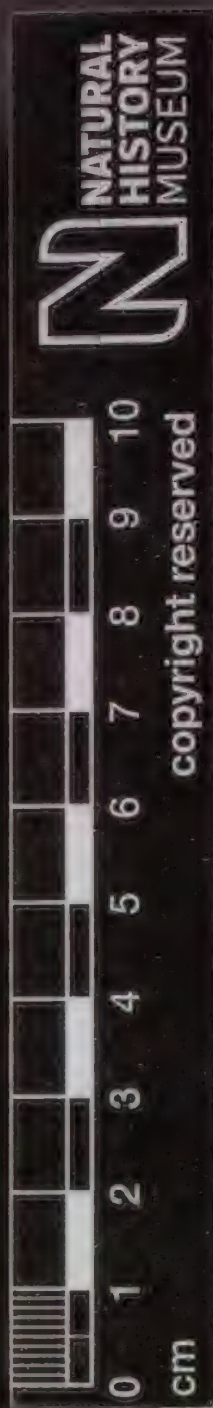


roundish maculations on the trunk of the caudal fin. The scales on the breast and belly have each a dash of green centrally which assume the appearance of broken longitudinal stripes. A longitudinal bluish-green stripe traverses the lower line of the breast and abdomen. The upper anterior portion of the head is violaceous, the sides violet-red and paler beneath. The margins of the lips, a stripe, which is a continuation of the margin of the upper lip and two posterior ocular radiations, blue. A short transverse ^{stripe} spot and a large irregular spot on the lower part of the head, green. Sides light golden. Dorsal light red, margined all round with bluish green. Anal carmine and margined red like the dorsal. Caudal green, the upper and lower margins bluish green, and an intra-marginal carmine stripe. Large spots of the latter color on the basal portion, and the outer marked with a transverse irregular red band. Pectorals light bluish-green. Ventrals the same, margined anteriorly with ^{dark} bluish green which is shaded off with carmine.

Length, 12 inches.

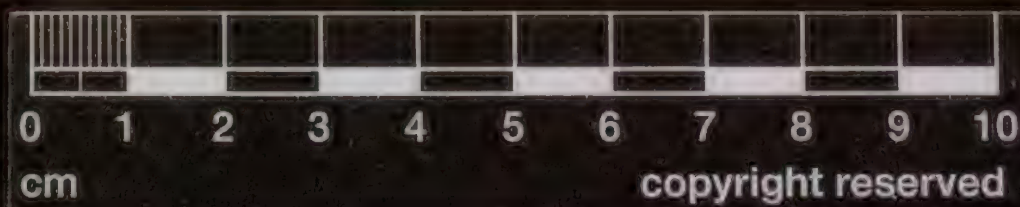
Habitat, Society Isls.

Remarks, A beautiful species, of which several have come to our notice.





Pseudocaranx forsteri
(Taf. 155)



microstomus

~~Russ~~ Scaurus frenatus, Garrett.

B. 5; D. 9-10; A. 2-9; V. 1-3; P. 14; C. 2, 1, 6, 5; 1, 1.

The general aspect of this Scaurus is more robust than usual. The greatest depth of the body falls a trifle short of a third of the total length. The head, which is very prominent upward and forward of the eyes, constitutes one-third of the fish, caudal excluded. The upper line of the muzzle is quite precipitate, slightly concave and rises at an angle of about 60° . The eyes are sub-circular, their diameter being about one-eighth the length of the head. The lower limb of the upper jaw is provided with a spine. Three rows of small scales on each cheek.

The dorsal extends considerably in advance of the opercular flap and is more than twice the length of the caudal, which latter is truncate in its posterior edge, and the angles prolonged into triangular points.

Body and occipital regions rich green, paler along the breast and belly. Each scale marked with a vertical linear copper-red spot, which become more dilated on

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cm

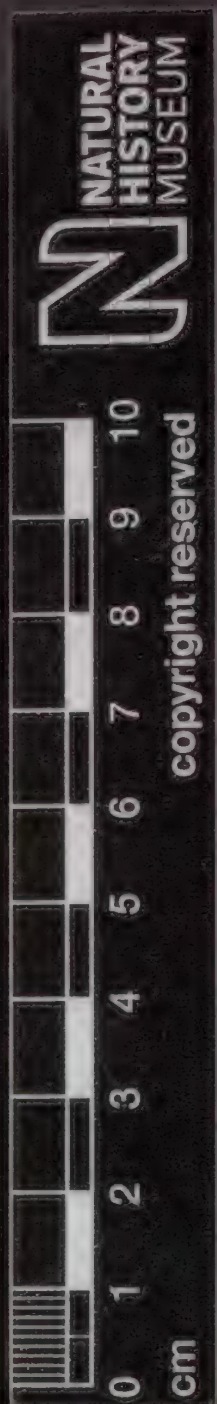


the trunk of the tail. The upper half of the snout, cheeks and the upper portion of the opercular pieces light brown. Lower part of head olive-color. Margin of the upper lip, a wide band under the chin, which runs back from the angle of the mouth to the opercular margin, and one beneath the head brilliant emerald green. jaws green. Dorsal and anal soiled buff-yellow, the former margined with greenish-blue and edged with black; the latter fin is margined with light blue. Ventrals pale lilac margined anteriorly and outwardly with light blue. The caudal is brownish lilac, margined all round with bluish-green; the posterior margin is more or less lobed and dashes of the same color may be observed on the ground color of the fin. Pectorals bluish-green.

Length, $16\frac{1}{2}$ inches.

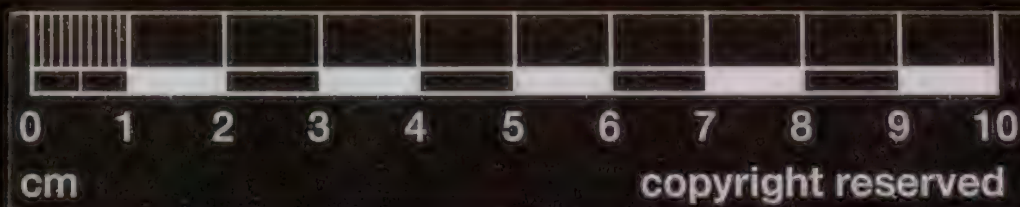
Habitat. Society Isls.

Remarks. A single mutilated specimen was obtained at the above location.





Pseudocaranx microdon
(page 156)



nuchipunctatus

Pseudo Scarus ~~*atro viridis*~~, *Garrett*

B. 5; D. 9-10; A. 2-4; V. 1-5; P. 13; C. 2, 1, 5, 3, 1, 1.

The greatest height of the body is a little less than a third of the total length, and the head constitutes just one-fourth of the fish. The eyes are sub-circular in shape, their diameter extreme about seven times in the length of the head, and inserted exactly midway between the end of the snout and the hinder termination of the opercular flap. The cheek exhibits three concentric rows of scales. A spine-like tooth projects laterally from the hinder portion of the upper jaw.

The ventrals are prolonged into long points. The large caudal is convex along its posterior margin, and the two hinder angles are considerably prolonged into acute points. Both dorsal and anal are well developed.

The ground color is dark dusky-green, with a brownish-red tinge beneath, and the scales are margined with purple. A black margined emerald green spot marks the origin of the lateral line.

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cm



The anterior portion of the head is more or less tinged rose-color. Irregular abbreviated streaks and small spots round the eyes and lower portion of the head, emerald green. Lips margined with vermilion and emerald green. Jaws green. Sides livid silvery. The dorsal, anal, and the upper and lower part of the caudal, reddish brown, the former margined with bluish-green and a fine intra-marginal black line. The anal is margined with blue and like the dorsal has a black line running parallel to the outer margin of the fin. Ventrals and pectorals purple, the former edged with blue. Caudal dark dusky-green, becoming ~~becoming~~ bluish green posteriorly, and edged the same above and beneath.

Length, 27 inches.

Habitat. Society Isls. Kingman
Is.

Remarks. At the Kingman Islands where it is common, it is called by the natives "Ye-ta-bo-sai".

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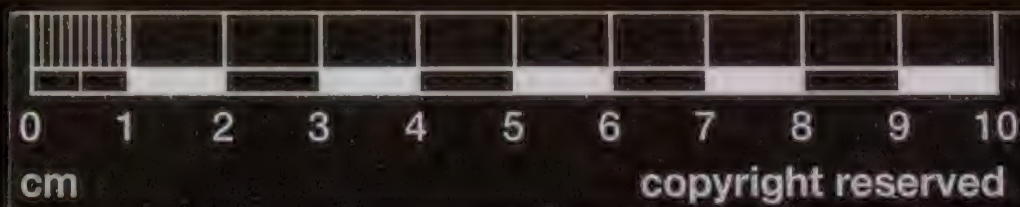
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cm





Pseudoscarus multipunctatus
[Laf.]



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Pseudo Scaurus <sup>*pectoralis*
lagulinus?</sup> ~~*formosus*, *formosus*~~

B. 5; D. 9-10; A. 2-9; V. 1-5; P. 12; C. 3, 1, 6, 3, 1, 2.

The depth of the body equals the length of the head, which latter comprises a fourth of the total length. The upper profile of the head presents a slight concave depression upward and forward of the eyes. Eyes circular in shape, their diameter entering about seven times in the length of the head. There are three concentric rows of scales on each cheek. A line dropped from the origin of the dorsal fin, touches the hinder termination of the opercular flap, the anterior base of the pectorals and ventrals. The caudal fin is sub-crescentic shaped. Ventrals half as long as the head and slightly pointed.

Color rich dark green, passing into bluish-green beneath. Each scale with a linear, vertical violet spot, which become broader on the peduncle of the tail. The upper anterior portion of the head is light dove-color, the lower half bluish-green. A diffuse sage-green band

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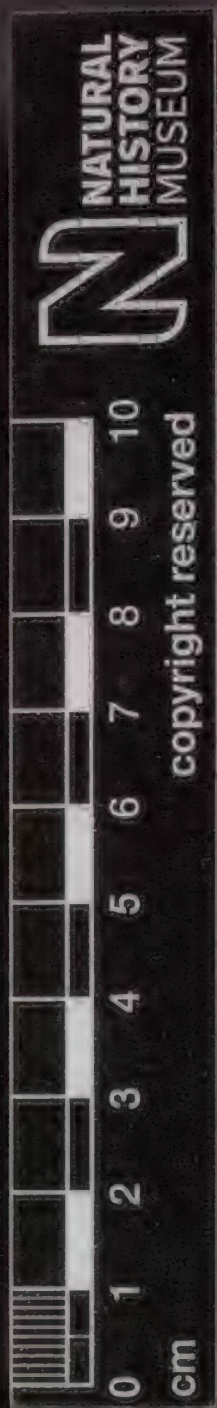


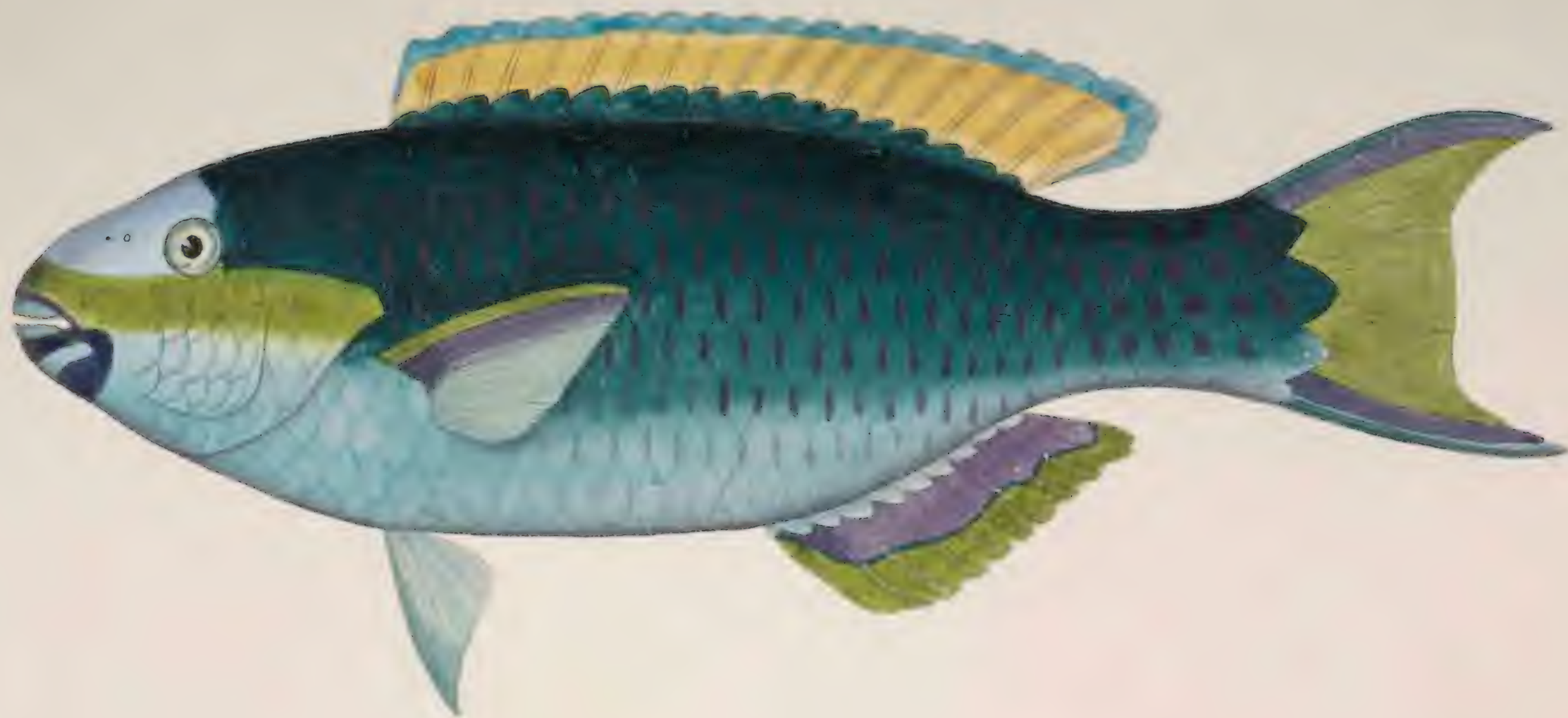
extends from the tip of the snout and
terminated at the end of the opercular
flap. A double violet band on the chin
and the edge of the upper lip, violet.
Jaws green. Vides silvery, variced with
green. The dorsal fin is amber color,
margined with bluish-green. The basal
half of the anal is violet, the lower part
sage green and the two colons separated
by a blue line. The caudal is sage
green, margined above and beneath
with dark green and an intramarginal
violet stripe. Pectorals pale greenish,
margined above with sage green and an
intramarginal violaceous stripe. Ventrals
pale bluish passing into green anteriorly.

Length, 12 inches.

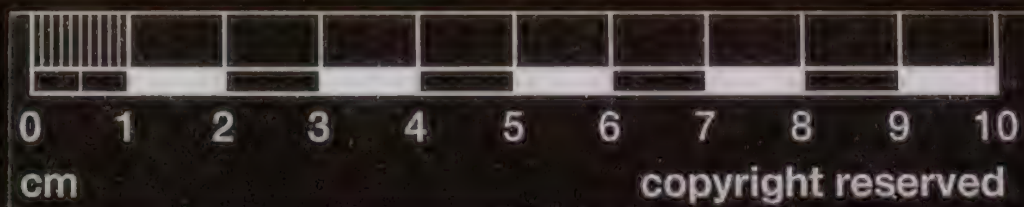
Habitat. Society Is.

Remarks. A common species cal-
led by the natives "Hou-pa-a-ti".





Pseudocaranx longicirris
australis



pectoralis
Equulius!

Scarus ~~*approximatus*, Garrett.~~

B. 5; D. 9-10; A. 2-9; I. 1-5; P. 13; V. 3, 1, 6, 2, 1, 2.

The head constitutes one fourth of the total length, and exhibits a slight concave depression upward and forward of the eyes. The greatest depth of the body enters three times and two-thirds in the entire length of the fish. The diameter of the eyes are two-thirds the length of the head. The caudal is sub-crescent shaped.

The ground color is green, becoming paler beneath. The upper posterior half of the head and the upper anterior half of the body is blackish-green. Each scale in the flanks is marked with a vertical linear violet spot, and round spots of the same on the caudal trunk. A saff-green band extends from the end of the upper jaw to the end of the opercular flap. Two short transverse bands on the chin. The upper lip is edged with emerald-green. The upper anterior part of the head is dove color. Irides silvery. Cornea blue-

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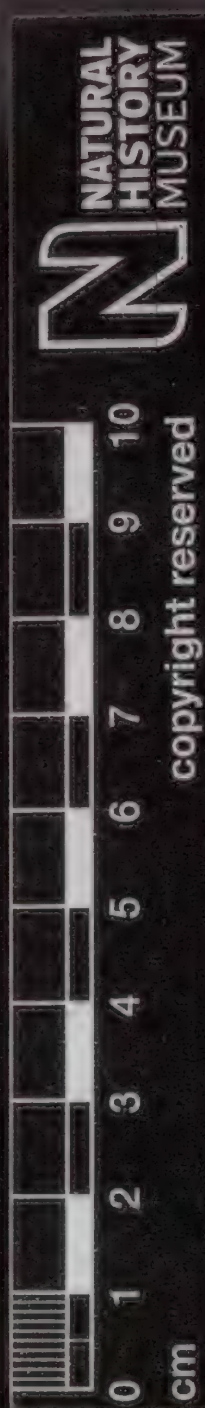


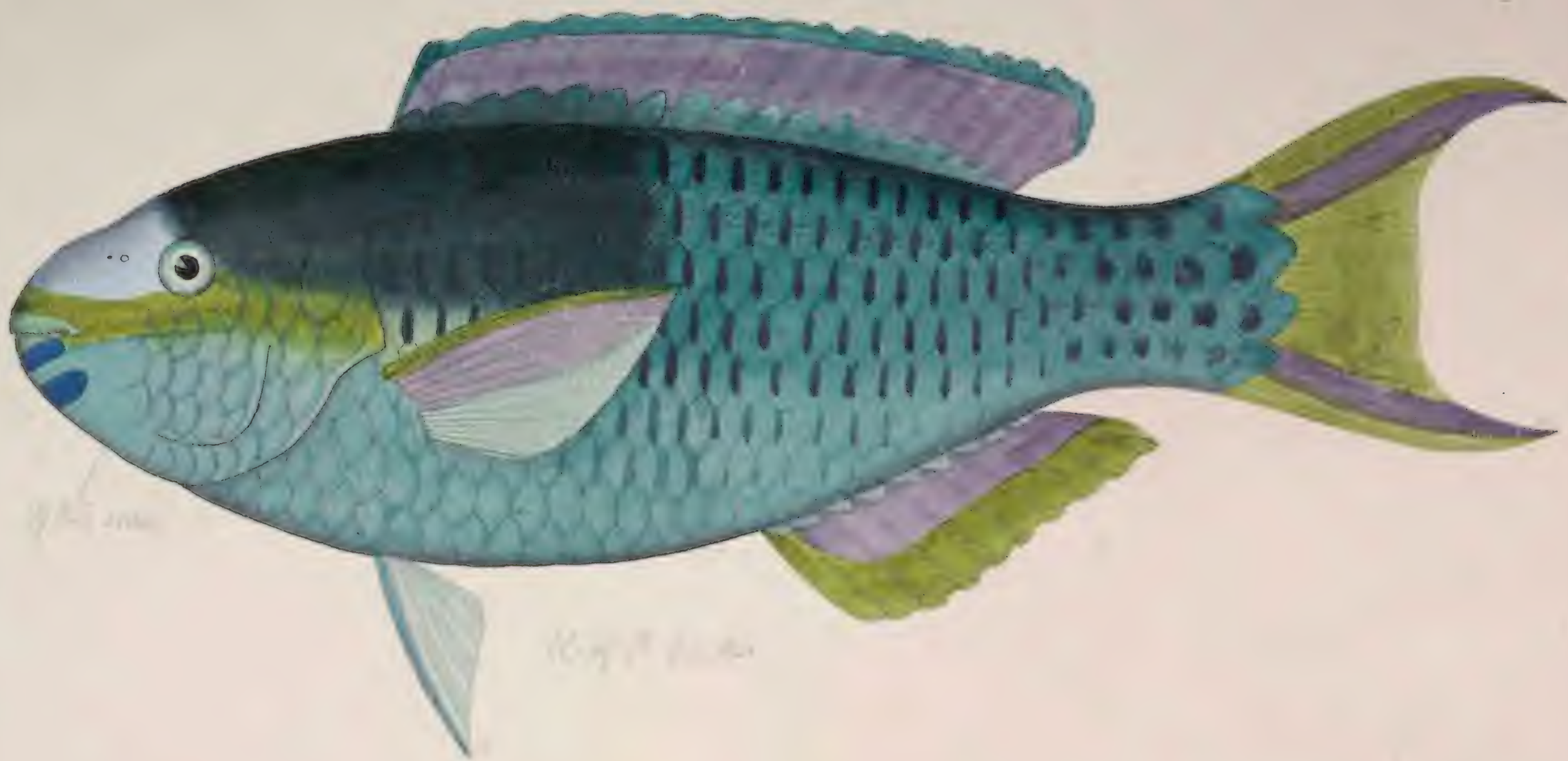
black. The dorsal fin is violet, margined with green. The basal half of the anal is violet, the outer half and the anterior margin, sap-green. Ventrals pale green, with an anterior blue margin. The pectorals are sap green above, their middle portion violet and their lower part light green. The caudal is sap-green, its upper and lower third traversed by a longitudinal violet band.

Length, 10 inches.

Habitat. Society Isls.

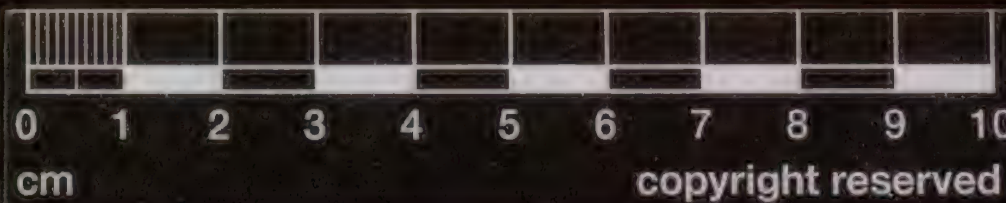
Remarks.—A common species at the Society Islands, where it is called "E-u-hu-ta-ro". It is closely allied to S. formosus but may be distinguished by the large deep blackish-green space on the upper anterior portion of the fish.





Pseudoscarus laevis
(Ref. 158) *pectoralis*

Pseudoscarus pectoralis



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357

Pseudo Scarus ^{*godeffroyi*} ~~*leguieris*~~, *garrett*.

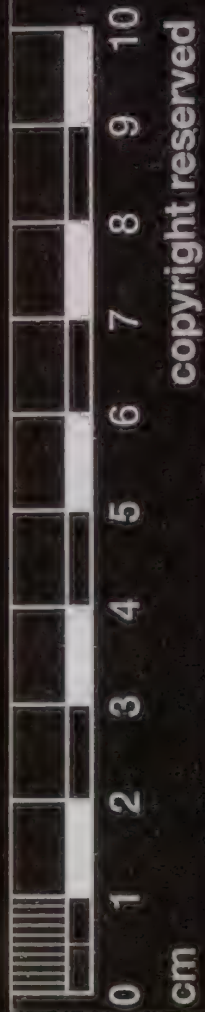
D. 9-11; A. 2-4; V. 1-5; P. 14; C. 2, 1, 6, 5, 1, 1.

The greatest depth of the body is a little more than a third of the total length, and the head, which has a concave depression upward and forward of the eyes, constitutes one-fourth of the fish. The eyes are situated rather nearer to the end of the snout than to the hinder termination of the opercular flap, and their diameter is equal to one-seventh of the length of the head. There may be observed three rows of scales on the cheek.

The dorsal fin is well developed, and commences immediately above the anterior base of the pectorals. It reaches its greatest altitude at the origin of its soft portion, which equals one-fourth the length of its own base. The anal fin takes its origin opposite the second soft dorsal ray. The ventrals are pointed. Pectoral rather large, their length equal to the base of the anal fin. The large caudal is convexly-rounded posteriorly, and the upper and lower hinder angles are prolonged into points.

The ground color is dark olivaceous-

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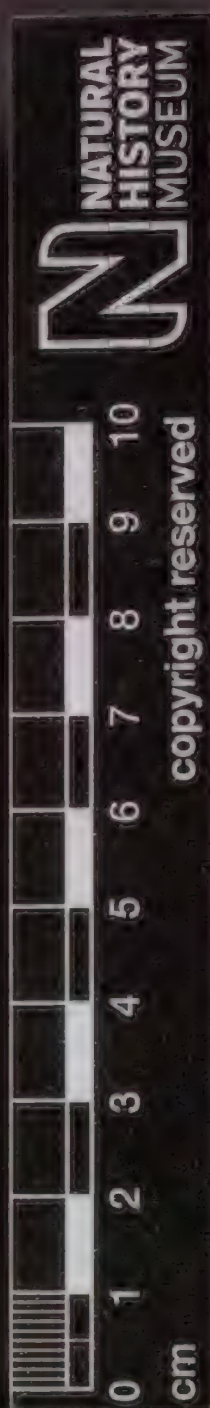


-slate which passes into brownish-red, on the belly, breast and lower half of the head. Muzzle red. Scales margined with dark red. A short transverse intra-marginal band over the snout, a few radiating ones round the eye, the lower one of which passes obliquely forward and downward beneath the head, and one or two spots in the lower part of head, dark bluish-green edged with black. Gills light bluish-green. Vides silvery-yellow; cornea deep blue-black. The dorsal and caudal are dark red, clouded with olivaceous-slate, margined with bluish-green. The anal fin is purple-red, shaded off with light blue along its upper and lower margin and marked with a row of blue spots along its middle portion. The ventrals are pale purple-red, anteriorly edged with bluish-green. Pectorals slate-brown.

Length, 12 inches.

Habitat. Society Islands.

Remarks. This is not very abundant at the Society Islands, where we have observed several specimens. Its vernacular name is "Lau-pa-pa-ru".



347.

Plate missing



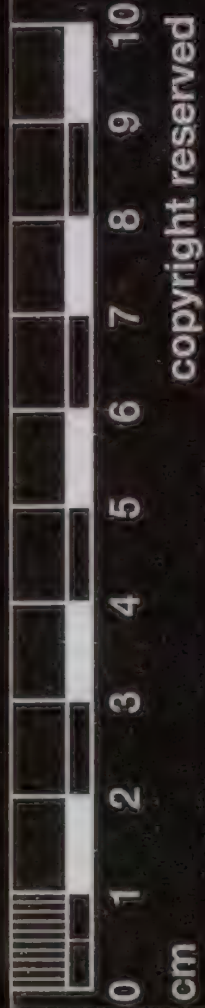
Pseudo Searus ^{*altipinnis* (Steind.)} ~~*setifer*, Garrett.~~

D. 9-11; A. 2-10; P. 14; V. 1-5; C. 3, 1, 6, 6, 1, 3.

This Searus is more robust than usual in species of this genus. The upper and lower outlines are nearly similar, both being regularly arched, and the upper one exhibits a slight concave depression on the interocular space. The greatest depth of the body is two-seventh of the entire length of the fish. The head is about equal in length and depth, and comprises a third of the entire length, caudal excluded. The eyes are small, circular, their diameter as compared to the length of the head is as two to fifteen. A small spine may be observed on either side of the hinder portion of the upper jaw.

The dorsal fin is rather deeper than usual, nearly equally divided in its two portions, and the first soft ray is drawn out into a filament. The anal is not so deep, but equally as long as the soft portion of the dorsal. Ventrals pointed. The pectorals are as long as the anal base. The caudal is large,

NATURAL
HISTORY
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convexly-rounded posteriorly, and the angles are prolonged into acute points which are half as long as the middle rays.

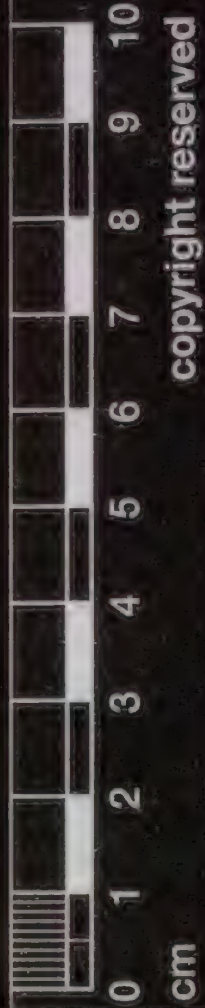
Color dull greenish. Copper-red on the lower part of the head, throat, and belly. Scales with narrow copper-red margins and irregularly dotted with the same. Irregular small bluish-green spots on the upper posterior portion of the head. Jaws light green. A band over the muzzle and two beneath, bluish-green. Vides copper-yellow. Dorsal fin pale brown, the upper margin bluish-green, the soft portion spotted with the same, and marked with an intramarginal yellow band. Caudal copper-red, margined and spotted with bluish green. Anal deep green and traversed by a wide irregular copper-red band edged with blue. Ventrals and pectorals striped with bluish-green, purple-red and sap green.

Length, 16 inches.

Habitat.—Hervey Isls, Pamotu Isls.

Remarks.—At the former location, where we procured one specimen, it is called "An mo ri".

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Éföður bítöðluf + q áttleuna

í hvar þessi nafn abbelet, ána þess. tíð ? ána.

þessu nafni er. congruunt, ána. þess.

30 þessu nafni, 10 þessu nafni q þessu nafni

þessu nafni, ána, þessu nafni þessu, þessu nafni þessu nafni

þessu nafni ána þessu nafni q þessu nafni þessu nafni, þessu nafni þessu nafni. 30 þessu nafni

$$\begin{array}{r} 7-6 \\ 7-6 \\ \hline 1-0 \end{array}$$

þessu nafni þessu nafni

1. Þessu nafni ána þessu nafni, þessu nafni ána þessu nafni, þessu nafni þessu nafni.

þessu nafni, þessu nafni ána þessu nafni, þessu nafni ána þessu nafni. ána, þessu nafni þessu nafni.

ána þessu nafni, þessu nafni ána þessu nafni, þessu nafni ána þessu nafni. ána þessu nafni, þessu nafni þessu nafni.

ána þessu nafni

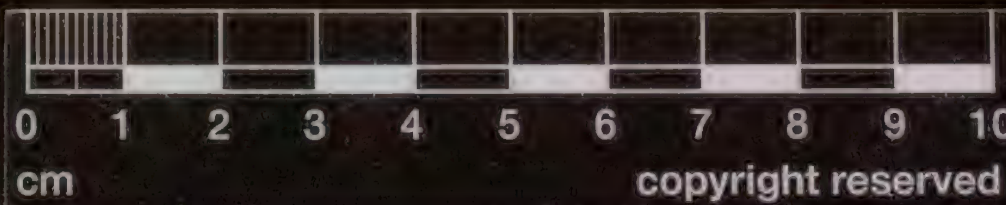
þessu nafni ána þessu nafni.





Pseudocarus altipinnis
(Lacep.)

Colors to be rather brighter, particularly the red of the lower parts and
caudal fin



Scarus ^{*trivialis, Ahr*} ~~*albomaculatus*~~, Garrett.

B. 5; D. 9-10; A. 2-8; V. 1-5; P. 14; G. 3, 1, 6, 6, 1, 2.

The greatest height of the body enters about three times in the total length, being rather deeper than usual and more strongly arched along the dorsal region. The head, which is considerably depressed above, constitutes one-third of the fish, caudal excluded. The eyes are circular, and their diameter enters seven times in the length of the head. Two concentric rows of scales in each cheek. All the fins are large. The first soft ray of the dorsal is prolonged above the membrane. The ventrals are slightly pointed and half as long as the head. The pectorals are slightly falcate. Caudal posteriorly rounded and the two angles prolonged into acute points.

Color nearly uniform reddish-brown, the former color predominating on the head, breast and belly. A few remote roundish white spots on the posterior half of the body. Irides golden with a brown ring near the cornea. Grown green. The fins are the same color as the body, and all except the pectorals more or less margined with dark bluish-green.

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cm



Length, 12 inches.

Habitat. Society Isls.

Remarks.— I have seen but two or three specimens of this species, which is called by the natives of the Society Islands, "Hou-u-hu-u-te". The white spots are more or less evanescent.

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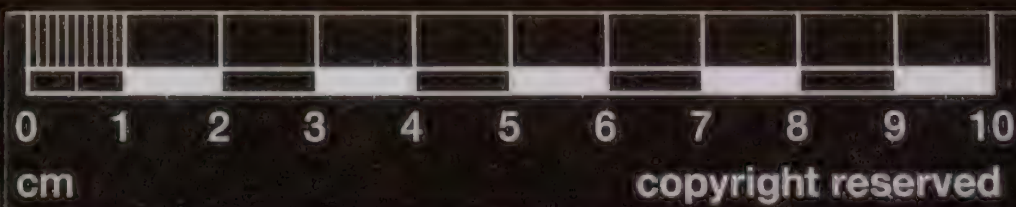
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Pseudoscarus brevifilis [Bleeker, 1861] [Lafal 161]



Pseudoceros abeurus~~*Scarus gaudiosus* *Linnaeus*~~

B. 5; D. 9-10; A. 2-7; V. 1-5; P. 13; C. 2, 1, 4, 2, 1, 1.

The head as compared to the total length of the fish is as one to three and a half, or slightly less than the greatest depth of the body. The eyes are sub-circular, their diameter entering about six and a half times in the length of the head. Two concentric rows of scales on each cheek. The dorsal fin commences in advance of the opercular flap and is twice as long as the anal. The expanded caudal is posteriorly convex.

The upper two-thirds of the body is straw-yellow passing into bluish-green beneath and on the caudal trunk. Scales ornamented with a vertical linear pinky spot, which become large and roundish on the peduncle of the tail, and on the lower third of the body they form broken horizontal stripes. The upper third of the head is brownish-purple and the lower portion, slate-green. The end of the snout, a stripe beneath the eye, two radiating ones posterior to that organ and the interorbital

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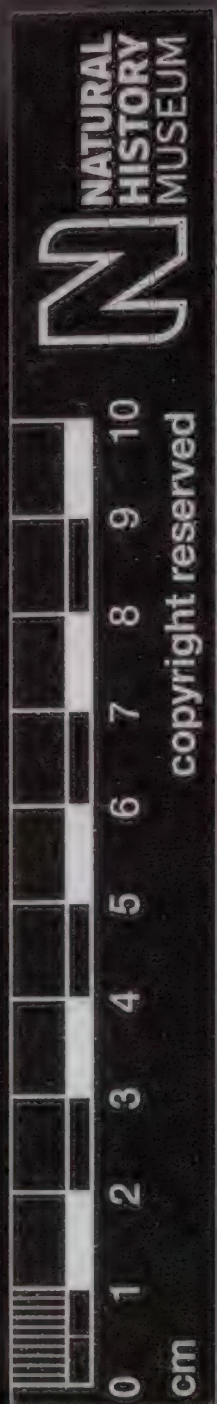
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cm

space, emerald green. Lips irregularly edged with pinky-red. Sides silvery with a pinky tinge. The dorsal fin is dark green, traversed by a horizontal wavy pinky-red band in which are some dark green oblong spots. Anal fin sap green, marked with a horizontal wavy pinky-red ~~red~~ band on its basal half. Ventrals pale greenish, with an anterior bluish-green margin. The pectorals are emerald green, and ornamented with a longitudinal irregular lobed pinky-red stripe. Caudal bluish green, with sap green shades.

Length, 12 inches.

Habitat.—Society Isls. Sandwich Isls.
Kingman Is. Panmotu Is.

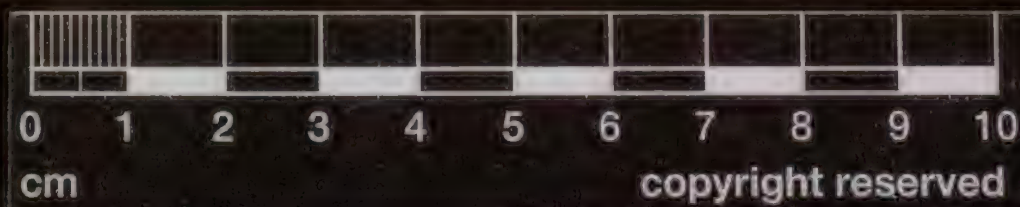
Remarks.—At the former location this Scorpa is called "E-u-hu-mi-ho." It may be easily distinguished by the yellow ground on the upper two-thirds of the body, which in the dead fish becomes greenish-yellow.





Pseudoscarus abacurus
(Zajel 162)

(Zajel 162, 163, 164)



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Scarus dubius, E. S. Bennett

Scarus dubius, E. S. Bennett, Zool. Jour.
Vol. 4, p. 34, 1924.

L. 10; D. 10; A. 10; P. 10; V. 10; S. 10.

The upper and lower outlines of the body are nearly similar in their curvature. The greatest depth equals the length of the head, or falls a trifle short of two-sevenths of the entire length of the fish. The snout is bluntly rounded off. The eyes are circular, their diameter equaling two-sevenths the length of the head, and inserted just midway between the end of the snout and the hinder termination of the opercle. There exists eight rows of scales along the sides, exclusive of the dorsal series. Twenty-two may be counted in the median row, and as many occupy the course of the lateral line. Each cheek has two consecutive rows, and three large oblong ones envelope the caudal base.

The dorsal fin is deep, of nearly equal height throughout its length, its spiny portion is triple the length,

NATURAL
HISTORY
MUSEUM



and its soft portion is frequently com-
bed off. The anal fin is more arched
than the fin above. Pectorals large,
their tips reaching back as far as the
vent. Caudal truncate, and convex when
expanded.

Color of the dead fish deep brown,
becoming reddish brown beneath. Ventrals
margined with pale brown, all together
tinged with vermilion red. Dorsal ap-
pear yellow. Dorsal and caudal reddish
brown. Anal purplish brown. Pectorals
pale brown, deeper colored above.
Ventrals light reddish brown.

Length 10 inches.

Habitat: Sandwich Is., Society Is.,
Kingman's Is., Palmyra Is.

It very abundant species at all
the above mentioned locations. Mr.
Bourne's specimens were immature
and he mentions the former location
as the habitat.

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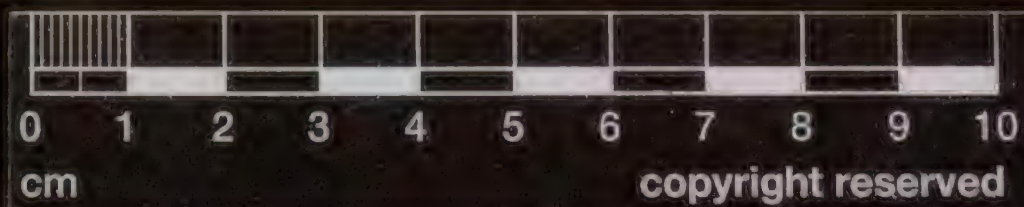
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Pseudonaxius



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Scaurus depressifrons. Gurnett.

D. 9-10; A. 5-9; V. 1-5; P. 13; C. 2, 1, 6, 5, 1, 1.

This Scaurus is characterized by the upper jaw being the longer, the lips covering the jaws, and the depressed upper profile of the head. The gap of the mouth runs slightly upward towards the eyes. The eyes are circular, approximating the upper line of profile, and their diameter equals one-sixth of the length of the head. The greatest depth of the body is nearly one-third of the total length. The head which is quite tapering anteriorly constitutes a fifth more than a fourth of the fish. The caudal and its peduncle, small, the former truncate along its hinder margin and the upper and lower angles prolonged into triangular tips. The extreme margin of the ventrals are concave.

Color of the dead fish light olivaceous-green along its upper parts and light bluish-blue beneath. Margins of the scales more intensely colored and those on the upper parts exhibit paler streaks. Ventrals pinky-red. All the vertical fins are

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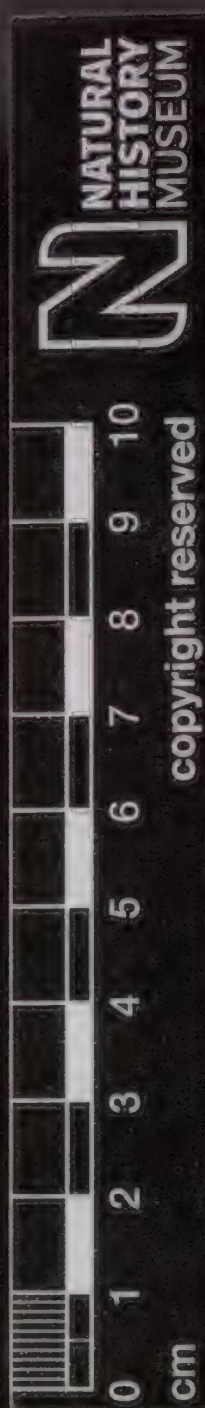
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straw-yellow, margined with light violet;
the dorsal and anal marked with a
longitudinal series of similar colored
spots. Ventrals slightly tinged with pink.
Pectorals tinged with straw-yellow and
margined with violaceous above.

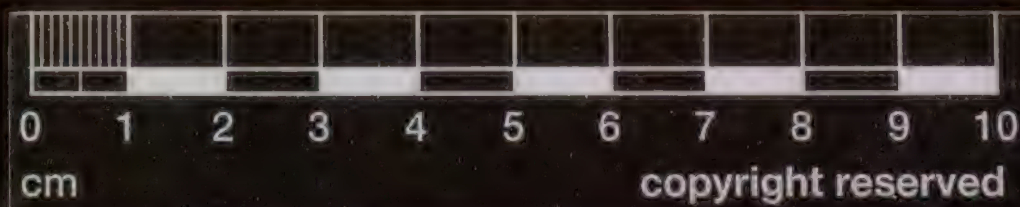
Length, 18 inches.

Habitat.—Panama Isls.





Pseudoscarus



Searus ornaticornis, Forst.

B. 5; D 9-10; A. 3-9; V. 1-5; P. 14; C. 2, 1, 5, 3, 1, 1.

The greatest depth of the body is not quite a third of the total length. The head, which enters three times and two-thirds in the entire length, is strongly arched in its upper profile, and the snout is rounded off. The eyes are convex, constituting one-seventh of the length of the head, and the posterior limb of their orbits are intermediate between the end of the snout and the hinder termination of the opercular flap. There may be observed two concentric rows of scales in each cheek.

The dorsal fin takes its origin in advance of the opercular corner and does not extend quite so far back as the anal. The Vandal is rather small and concavely emarginate behind.

Color dark green, becoming bluish-green beneath. An oblong vertical spot on each scale, roundish ones on the peduncle of the tail, a few irregular ones on the side of the head, margins of the lips, and rude reticulations on the upper third of

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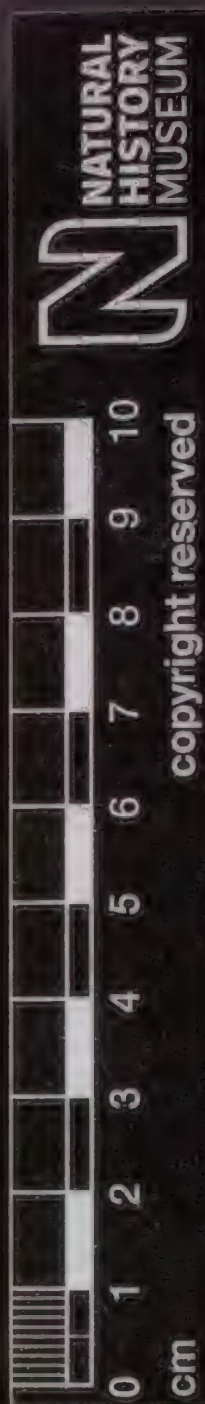


of the head, semimilken-red. Sides cupreous tinged with green. The dorsal fin is dark tawny-yellow margined above and along its base with bluish-green; a few irregular spots of the same color on the spring portion, and elongate ones parallel to the rays in the soft part of the fin. The anal is blue, maculated with irregular large brownish dove colored spots which are mostly disposed parallel to the rays. Ventrals pale bluish green, anteriorly margined with blue, which is shaded off with light fawn yellow. Pectorals pale green, with a blue upper margin. Caudal dark green becoming paler posteriorly, and marked in the direction of the rays with dark copper red irregular stripes which are more or less branched and confluent.

Length, 14 inches.

Habitat.—Society Isls.

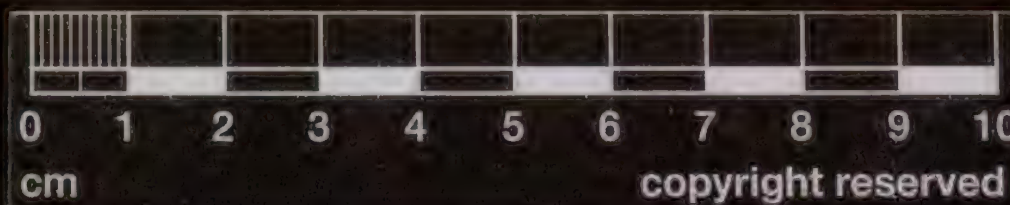
Remarks.—Of this species we have seen but three specimens. Its most obvious characters is its rounded muzzle, arched profile and peculiar markings.





*Surge wrasse - very common in the
lagoon*

Pseudoscarus



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Scarus ~~gibbosus~~, ~~Garratt~~.

B. 5; D. 9-10; A. 3-10; V. 1-5; P. 14; C. 2, 1, 6, 5, 1, 2.

The greatest depth of the body equals the length of the head, or nearly a fourth of the total length of the fish. The head is strongly gibbous upward and forward of the eyes, and the snout is nearly vertical. The diameter of the eyes are one-seventh of the length of the head, and inserted nearer to the end of the snout than to the hinder termination of the opercular flap. A small spine on the posterior portion of the upper jaw. Two concentric rows of scales on each cheek, twenty one scales along the median line of the body and twenty four are marked with the adnrescent lateral line tubes.

The dorsal fin is moderately developed, its height being about one-eighth the length of its own base. The ventrals are prolonged into acute points, and their length equals one-third of the dorsal base. The large caudal is crescent shaped.

Color rich bluish-green, paler beneath. Scales with deeper colored margins and each marked with a vertical linear fawn colored spot, which assume

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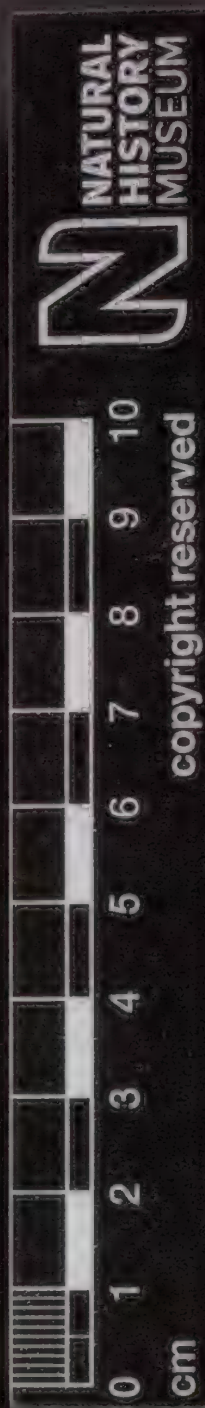


a rounded shape on the trunk of the caudal fin. A few small spots near the eyes and reticulated lines on the preopercle, lilac color. Sides cupreous. The dorsal and anal are violaceous, margined with deep bluish-green. The caudal is bluish-green and irregularly streaked in the direction of the rays with deep violet. Ventral and pectorals pale bluish-green, the former anteriorly edged with rich light blue, and the latter with a large sub-central diffuse black spot.

Length, 14 inches.

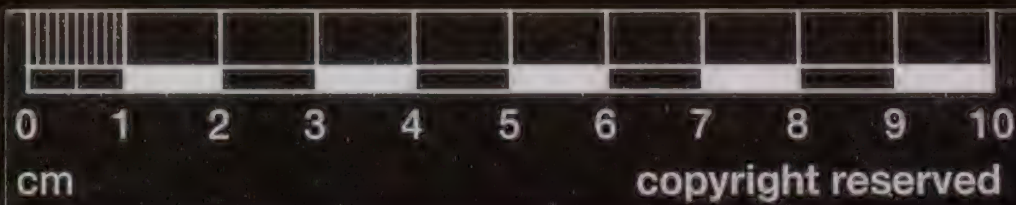
Habitat. Society Isls.

Remarks.—A large beautiful species called by the natives at the Society Isls, "E-u-hu-ta-ro". Its obvious characters are its gibbous forehead, vertical snout, pointed pectorals, crescent tail and peculiar markings.





Pseudoscarus



Searus fallidus, ~~Günther~~.

B. 8; D. 9-10; A. 3-4; V. 1-5; P. 14; C. 2, 1, 6, 3, 1, 1.

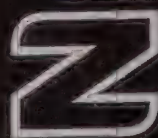
The greatest depth of the body is less about three and a half times in the total length. The head which constitutes a fourth of the fish, is slightly concave upward and forward of the eyes. Two concentric rows of scales on each cheek. The caudal posteriorly convex, with the angles drawn out into acute points.

Color of the living fish bluish-white, changing to a light grayish fawn in the dead specimen. Scales margined with ochre-yellow, and the lower ones tinged with livid. Vides ochre-yellow; cornea deep green. The dorsal fin is orange-red, margined with light blue. Anal dark orange-red, margined with violet. Caudal pale livid. Pectorals amber yellow. Ventrals nearly colorless.

Length, 12 to 14 inches.

Habitat.—Society Isls.

Remarks.—This species is characterized by its pale color. At the Society Islands it is called "Eahu-ao".

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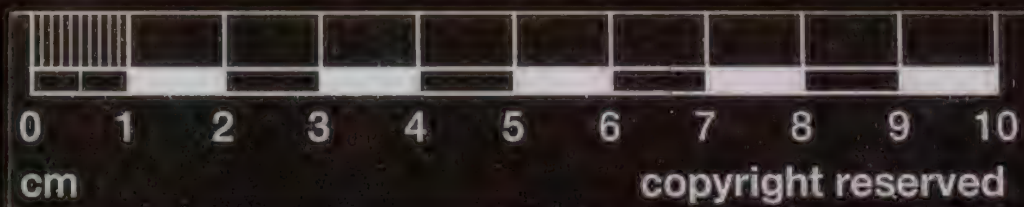


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Pseudoscarus



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Cyphidium No 130

366

D. 130; A. 105; P. 22.

Form elongate, slightly compressed anteriorly and strongly compressed posteriorly. The greatest depth is just behind the pectorals, and equals about one fifth the total length of the fish. The body gradually tapers away posteriorly to a point. The scales are minute, covering all parts of the body and head, except the jaws, and ascend high on all the fins. The lateral line is gently arched over the pectorals and straight the remainder of its course. The head which is contained four and a half times in the length of the body, is furnished with numerous long cirri, two in front of the interorbital space, four on the end of the upper jaw, six attached to the under jaw, and two bifurcated ones on the throat. The eye is longitudinally oval, its length being one fifth that of the head, and inserted one third length from the end of the upper jaw. The gape of the mouth is deep, and the hinder tip of the maxillary reaches behind the orbit. Teeth fine rasp-like, arranged in a single band in either jaw. Similar teeth on the vomer and pharyngeal plates, those on the former being disposed in three patches in the form of the letter V, and the latter are on 12 plates, ten in the upper and two on the lower pharyngeal. The scales are covered with a scaly opaque membrane.

The dorsal fin arises above the

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middle of the length of the pectorals, slightly increasing in height for about half its length, which height equals a little more than the length of the eye, and unites to the anal posteriorly, both terminating in a point. The anal fin is similar to the fin above, but not quite so deep. The pectorals are round.

Color varies from a pale cinereous brown to a rich dark brown, some times mottled with both colors, pale beneath the head and abdomen, where there is sometimes a yellowish tinge. Irides bluish, or brown, lips red on their outer halves and either white or yellow on their inner portions. Pectorals brown, reddish posteriorly, some times yellow. Dorsal and anal the same color as the body, becoming darker in their terminal portions, which are edged with white or red.

Length 10 inches.

Hab. - Sandwich Is. Society Is.

Rather common on the rocky coasts at the former location, where it is called by the natives Pa-la-ho-wa-ona. It is very rare at the latter location.

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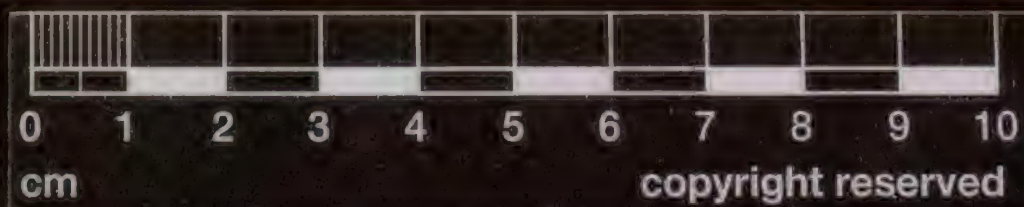
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? *Brotula marginalis*



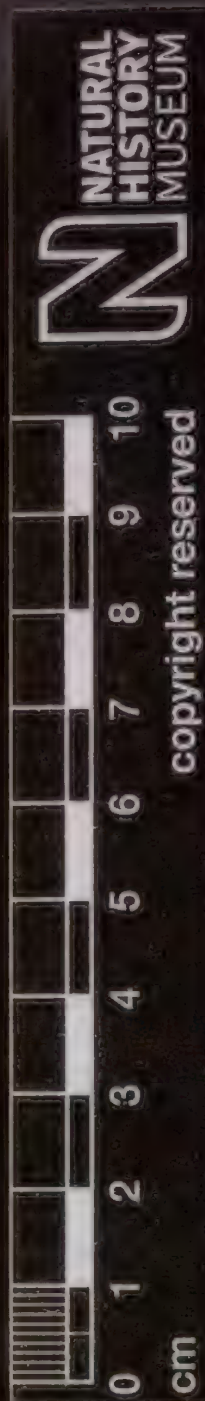
Genus Oxybelas, Bleeker

Body elongate, anguilliform, compressed, scaleless and tapering away from the head to a pointed tail. Lateral line straight, but not well defined. The anus is near the throat. Head well developed; muzzle short, and the upper jaw the longer. Mouth more or less oblique, with a deep gap. Pharyngeal teeth card-like. Small teeth on either jaw, vomer and palatine. Nasal openings double, situated between the eyes and end of snout. Branchiostegal rays six, slender and not covered by the gill covers. Gill apertures united by a fragile isthmus. Eyes inserted in advance of the hinder corner of the mouth. Dorsal fin rudimentary, sometimes reduced to a mere cutaneous fold. Anal commencing beneath the pectorals, and tapering away to the pointed tail. Pectorals oval and more or less developed in different species.

These remarkable fishes are parasitical in their habits, being only found in the water cavities of Holothurians and some of the large Star-fishes.

Oxybelas No 132 *Firopaspar parvipinnis*

The body is much elongated and considerably compressed, tapering away from the base of the head to an acutely pointed tail. Its greatest depth as compared to the total length is as one to about thirteen. The lateral line is by no means conspicuous, and is ac-



lineare in its course to the tail. The head is short, longer than deep and less compressed than the body. It comprises nearly a ninth of the total length of the fish, and the muzzle is very short, tapering, and the snout projects slightly in advance of the lower jaw. The mouth is large, very oblique in its closure, and the hinder extremity of the maxillary extend far posterior to the eyes. The jaws are nearly even and the lips are narrow, thin, the lower one united to the symphysis of the jaw by a broad praeum. The lower maxillary teeth are small, acute, conical, disposed in a closely set band, of which the external ones are the largest. Those on the upper jaw are card-like and also disposed in bands. An elongate band of small conical teeth exists on each palatine and the prominent vomer is furnished with a small patch of teeth like those on the palatines, but have in addition two or three which are more developed than the others. The eyes are small, circular, their diameter as compared to the length of the head is as one to seven, and they are situated just over their own diameter from the end of the snout. Just in advance of the eyes may be observed the double nasal openings, the anterior exactly midway between the border of the orbit and the end of the snout.

The dorsal fin consists of a mere fold of the skin, without



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NATURAL
HISTORY
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any visible rays, and may be traced on the posterior two third of the fish. The anal fin is considerably developed, commencing beneath the base of the pectorals, and close to the anus and tapers away either way from the anterior fourth. It is composed of simple unarticulate rays and is enveloped in the integuments. The minute pectorals are ovate in shape, inserted on the median line of the body and composed of about a dozen rays.

The color of this species is light brownish, paler beneath and covered with most minute brown dots of a deeper hue than the ground color.

Young individuals are more slender and pellucid.

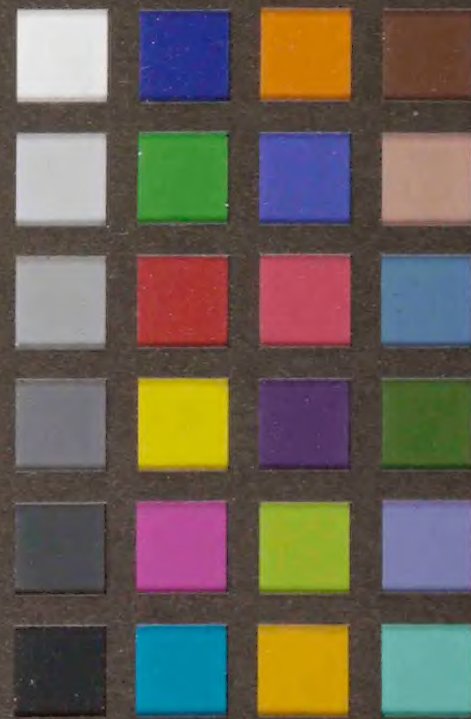
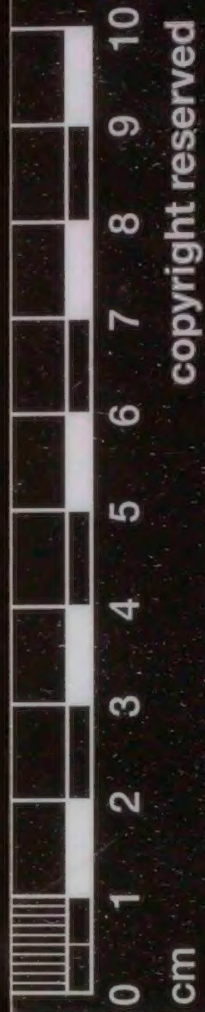
Length 9 inches.

Hab. Society Isls.

Oxybeles No 131 *Fierasfer hornii* 368

This species may be distinguished from the preceding one by its more oblong head, less oblique mouth, and more oval eyes. The body is also more slender posteriorly and the dorsal fin is slightly more developed. The pectorals are also larger. The lower jaw is armed with a single range of acute, slightly hooked teeth, and a band of smaller ones on the upper jaw, otherwise the same as the preceding species.

NATURAL
HISTORY
MUSEUM



This elegant species is ^{so} ~~very~~ transparent that the whole bony structure is distinctly visible. The head and abdomen are variegated with the most brilliant silver and golden reflections. Bluish silver shades on the top of the head. Sometimes there is a series of black dots along the base of the anal fin, and most generally a row of carmine dots disposed in pairs along the median line of the body.

Length 8 inches

Hab. Society Isls.

Native name Pu-hi tote.

Apodes No 133

Not having made any notes at the time I obtained the specimen, I cannot give any description, and can only refer to the drawing for information relative to color and shape, which is cylindrical. The drawing is natural size of the single specimen obtained at the Society Isls. At the Viti Isls I saw an example 3 feet in length. They live in the sand.



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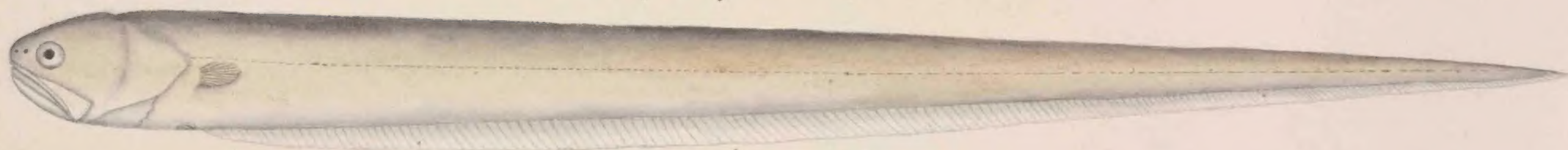
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368

Pteraster homei

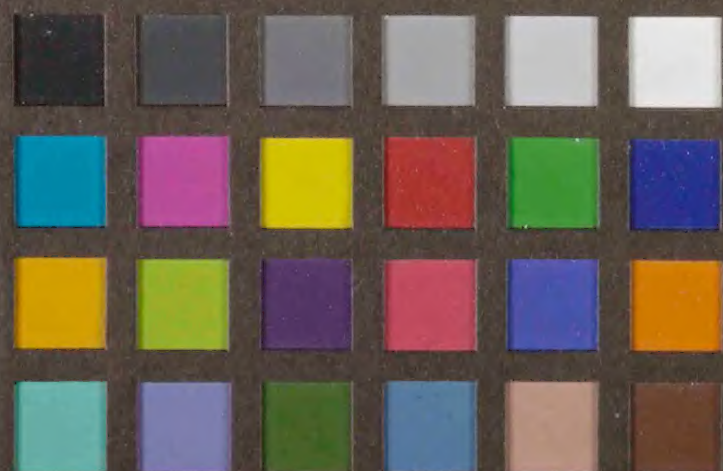


Pteraster parvipinnis



132

367



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